

AMERICAN BEE JOURNAL



THREE-BAND ITALIAN QUEEN-BREEDING YARD OF JOHN M. DAVIS.



CARNIOLAN BEE-YARD OF JOHN M. DAVIS, OF MAURY CO., TENN. —See page 136.

American Bee Journal



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GEORGE W. YORK & COMPANY
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Objects of the Association.

- 1st.—To promote the interests of its members.
- 2d.—To protect and defend its members in their lawful rights.
- 3d.—To enforce laws against the adulteration of honey.

Annual Membership Dues, \$1.00.

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All from extra-select mothers, Davis' Best, and the best money can buy

3-band and Golden Italians bred $3\frac{1}{4}$ miles apart, Carniolans 5, Caucasians 7 miles away

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November 1st to July 1st			July 1st to Nov. 1st					
	1	6	12	1	6	12		
Untested	\$1.00	\$5.00	\$ 9.00	\$.75	\$ 4.00	\$ 7.50	Straight 5-band	\$10.00
Select Untested	1.25	6.50	12.00	1.00	5.00	9.00	Select Golden	4.00
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Select Tested	2.50	13.50	25.00	2.00	10.00	18.00	Select Carniolan	5.00
							Select Caucasian	5.00

Untested Carniolan and Caucasian, \$1.25 each; 6 for \$7.00; 12 for \$12.00.

Nuclei, without queens: 1-frame, \$2.50; 2-frame \$3.50; 3-frame \$4.50. 1 Full Colony, 8-frame \$9.00.

Select the queen wanted and add to the above prices.

NOTE

I have transferred to my son, Benj. G. Davis, my straight 5-band and Golden department, and in order to receive the promptest attention, all correspondence for these should be sent direct to him. He practically grew up in my queen yards, rears queens by my methods, has had charge of this department for years, and understands his business. No bee-disease.

JOHN M. DAVIS, Spring Hill, TENNESSEE, U. S. A.

A Standard-Bred Italian Queen-Bee

For a number of years we have been sending out to bee-keepers exceptionally fine Untested Italian Queens, purely mated, and all right in every respect. Here is what a few of those who received our Queens have to say about them:

What They Say of Our Queens

GEORGE W. YORK & Co.:—The two queens received of you some time ago are fine. They are good breeders, and the workers are showing up fine. I introduced them among black bees, and the bees are nearly yellow now, and are doing good work.
 Nemaha, Co., Kan., July 15, 1905. A. W. SWAN.

GEORGE W. YORK & Co.:—After importing queens for 15 years you have sent me the best. She keeps 9 $\frac{1}{2}$ Langstroth frames fully occupied to date, and, although I kept the hive well contracted, to force them to swarm, they have never built a queen-cell, and will put up 100 pounds of honey if the flow lasts this week.
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GEORGE W. YORK & Co.:—The queen I bought of you has proven a good one, and has given me some of my best colonies.
 Washington Co., Va., July 22, 1905. N. F. OGLESBY.

GEORGE W. YORK & Co.:—The queen I received of you a few days ago came through O.K., and I want to say that she is a beauty. I immediately introduced her into a colony which had been queenless for 20 days. She was accepted by them, and has gone to work nicely. I am highly pleased with her and your promptness in filling my order. My father, who is an old bee-keeper, pronounced her very fine. You will hear from me again when I am in need of something in the bee-line.
 Marion Co., Ill., July 13. E. E. MCCOLM.

We usually begin mailing Queens in May, and continue thereafter, on the plan of "first come first served." The price of one of our Untested Queens alone is 75 cents, or with the monthly American Bee Journal one year—both for \$1. Three Queens (without Journal) would be \$2.10, or 6 for \$4.00. Full instructions for introducing are sent with each Queen, being printed on the underside of the address-card on the mailing-cage. You cannot do better than to get one or more of our fine Standard-Bred Queens.

Address, **GEORGE W. YORK & CO., 118 W. Jackson, Chicago, Ill.**

Getting New Subscribers

This should be a good time to get new subscribers for the American Bee Journal. On another page we offer a number of premiums for such work. We hope that as many of our present readers as possible will help us to increase our subscription list. The more

intelligent bee-keepers are, the better it will be for all interested in the business. And much of that intelligence is secured by reading. We will be pleased to send free sample copies on request. Shall we not be favored with a large increase of new subscriptions during the next 2 or 3 months?

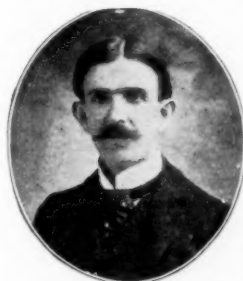
LOOK OUT FOR LEAKS

A leaky roof on your hen-house will cost you a good many dollars in loss. You needn't expect any profits if the water drips or pours all over your poultry every time it rains or snows.

"STAR" FELT ROOFING

makes a water-tight, "just right" roof for the hen-house. Will keep your poultry dry and warm so they can work and save you all the loss the leaks cause. It's cheaper, looks better, and is better than shingles or metal, and lasts longer; made in 1, 2 and 3 ply, especially for poultry houses and coops. You lay it yourself. Write for prices and free samples today.

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Dept. 27, 26-28 Vesey Street New York City, N. Y.



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It has built its Reputation and established its Merits, on its own Foundation and its own Name.

We make a Specialty of Working Wax into Foundation for Cash.

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A small stock left of slightly damaged goods, at reduced price. Send for fire sale list, also full catalog of new goods. Quote us prices on Honey and Beeswax, Honey in 60-lb. cans for sale. Pure Italian Bees in up-to-date hives for sale.

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A. G. WOODMAN CO., Grand Rapids, Mich.

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BIG STOCK of The A. I. Root Co.'s BEE - SUPPLIES

at their manufacturers' prices. For cash sent in April, deduct 8 percent; for cash sent in May, deduct 7 percent. Take their 1908 price-lists, if you have them; if not, send for them.

3Atf S. D. BUELL, Union City, Mich.

ITALIAN QUEENS—from direct import
mothers—red clover strain, \$1.00. Circular.
3A6L A. W. YATES, 3 Chapman St., Hartford, Conn.

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Improved superior Italians are what QUIRIN-THE-QUEEN-BREEDER furnishes. Stock is Northern bred and hardy. All wintered on summer stands and not a colony lost the past winter. Over 20 years a queen-breeder.

Prices before July 1

	1	6	12
Select queens.....	\$1.00	\$5.00	\$9.00
Tested queens.....	1.50	8.00	15.00
Select tested queens.....	2.00	10.00	18.00
Breeders.....	4.00		
Golden five-band breeders.....	6.00		
Two-comb nuclei, no queen.....	2.50	14.00	25.00
Three-comb nuclei.....	3.50	20.00	35.00
Full colonies on eight frames.....	6.00	30.00	

Add price of whatever grade queen is wanted with nucleus or colony. Bees ready about May 10th, Danzy or L. frame. Safe arrival guaranteed. Free circular and testimonials. 4atf

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Mention Bee Journal when writing.

Italian and Caucasian BEES, QUEENS and NUCLEI

Choice home-bred and Imported stock. All Queens reared in full colonies.

Prices for June

One Untested Queen.....	\$.90
One Tested Queen.....	1.10
One Select Tested Queen.....	1.40
One Breeder Queen.....	2.20
One C'b Nucleus (no queen).....	.95
One Unt'd Caucasian Queen.....	1.25
One Tested Caucas'n Queen.....	1.75

Safe arrival guaranteed. For prices on larger quantities and description of each grade of queens, send for price-list.

All queens by return mail. A few hundred pounds of Comb Foundation. Send for sample and price.

J. L. Strong, 200 East Logan St.
4tf Clarinda, Iowa

Not Cheap Queens, But Queens Cheap.

Bred from the very best selected strain. Guaranteed to work any flower.

Italian Bees Work or Money Refunded

Untested Italian queens in lots as follows:

One, 75 cents; Six, \$4.20; Twelve, \$7.80.

Tested Italian queens in lots as follows:

One, \$1.00; Six, \$5.70; Twelve, \$10.80.

Nuclei with untested Italian queen:

One fr., \$1.75; Two fr., \$2.25; Full Col. \$4.75.

Nuclei with tested Italian queen:

One fr., \$2.00; Two fr., \$2.50; Full Col. \$5.00.

The above queens are all reared from the very best selected red clover Italian queens. Orders filled by return mail. Dealer in Bee-keepers' Supplies.

W. J. Littlefield, R. F. D. No. 3
4Atf Little Rock, Ark.

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ITALIAN QUEENS

By Return Mail

Warranted \$1.00 each; 6 for \$5.00.

Tested, \$1.50. Circular Free.

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Illinois.

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Two cans to the case. Both cans and cases in A-1 condition. Price, 30c per case in lots of 100 cases or more. Write for prices.

Michigan White Clover Honey Co.

4Atf 29 WOODBRIDGE ST., WEST, DETROIT, MICH

3-Frame Nuclei of Bees FOR SALE

We are now booking orders for Italian Bees—with fine Tested, Italian Queens—3-frame nuclei at \$3.50 each, or \$3.25 each in lots of 5; Full Colonies in 8-frame hives—\$7 each, or \$6 in lots of 5. The Nuclei are for delivery about May 10, and full colonies May 1, or perhaps a little earlier. All will be shipped from point 100 miles west of Chicago, and the prices quoted are f. o. b. express car there. No disease, and satisfaction guaranteed. First come, first served. Address,

GEORGE W. YORK & CO., 118 W. Jackson, Chicago

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Pharr's Golden took first prize at 3 exhibits in Texas in 1907. We will furnish Golden, Carniolan, Caucasian, and 3-band Italian Queens, untested, \$1.00 till May 15, then 75 cents; Tested, \$1.25 till May 15, then \$1.00. For large quantities, write. Our 3-band Breeders from W. O. Victor and Grant Anderson strains; other races from the best obtainable. "Prompt service and satisfaction," is our motto.

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NEW CENTURY QUEEN-REARING CO.,
or JOHN W. PHARR,

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Moore's Strain, and Golden Italian Queens

Select Untested Queens, \$1; 6 for \$5; 12 for \$9. Carniolan, Banat, Caucasian Queens; Select, \$1.25; 6 for \$6; 12 for \$10. Tested, any race, \$1.50; 6 for \$8. Choice Breeders, \$3.50. Circular free.

3Atf W. H. RAILS, Orange, Calif.
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HONEY

California sage, pure and well ripened. Place your order now. Light amber, 60 lb. can, 6c; case, 120 lbs, 5 1-2c F. O. B. Sample 10c.

R. M. SPENCER, Nordhoff, Calif.

ITALIAN BEES AND QUEENS

Best of Stock, free from disease
For May delivery: Untested, 75c each; 2-frame Nucleus, with Queen, \$2.50 each; Chesley Presswood, Reliance, Tenn. 3Atf

FOR SALE

Queens of my Famous Red Clover Stock. Untested 50c each; Tested, \$1 each. Golden, same price. Nuclei, \$1 per frame. 5A5t

H. A. ROSS 1709 Upper Second St., EVANSVILLE, IND.

A FULL LINE of Bee-Keepers' Supplies. My patent Section Machine at half-price. A new queen-nursery, and queen-rearing outfit. Queens from imported Italians, Caucasians, Carniolans; and Adel queens. Send for Catalog and price-list. CHAS. MONDENG, 160 Newton Ave. N., Minneapolis, Minn. 3A6t

BEE-SUPPLIES Send list of wants for low prices and best goods, to 4A2t E. T. ABBOTT, St. Joseph, Mo.



"Forty Years Among the Bees"

By Dr. C. C. Miller

One of the Best-Known Honey-Producers in all the World

THIS book of over 340 pages tells just how Dr. Miller manages his apiaries to produce the most honey, which, in turn, brings the most money. Dr. Miller has been "at it" some 45 years, and so is competent to tell others the best way to be successful with bees. In 1903 his crop of comb honey was over 18,000 pounds, and he is not located in the best honey-producing part of the United States, either—Northwestern Illinois.

The book is bound in substantial cloth, gold-lettered, and is sent post-paid for only \$1.00; or with the American Bee Journal one year for \$1.25. (Or send us 4 new subscriptions to the Bee Journal—with \$2.00—and

we will mail you the book free as a premium.) Every bee-keeper ought to have both the book and the Bee Journal, if not already possessors of them.



As Dr. Miller gets a royalty on his book—so many cents on each copy sold—every bee-keeper who buys it is thus helping a little to repay him for his effort to lead others to success through his writings on bee-culture.

As we have a good stock of these books on hand, we can fill all orders by return mail. This is the time of year to read up on bee-keeping. Better send us your order at once for Dr. Miller's book, and study it carefully so as to make the most of the bee-season. Address,

GEORGE W. YORK & CO., 118 W. JACKSON BLVD. CHICAGO, ILL.



TEXAS

QUEENS

The famous honey producers are well in the lead. I am booking orders now for April, May and June deliveries—Italians, Carniolans, Golden and Banat Queens.

Prices either race: Untested, 75c each; \$8.00 doz. Choice Tested, \$1.25 each; \$12.00 doz. Choice Breeders, \$3.00 each. Circular for your address. 2-If

GRANT ANDERSON, Sabinal, Texas

IF YOU WANT THE BEE-BOOK

That covers the whole Apicultural Field more completely than any other published, send \$1.20 to

Prof. A. J. Cook, Claremont, Cal.,

—FOR HIS—

"BEE-KEEPER'S GUIDE"

Liberal Discounts to the Trade.

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BEE-HIVES Finest made. 1-story, 5 8-fr. for \$4.50; 10-fr. for \$4.95. 1 1/2-story, 5 8-fr. for \$6.45; 2-story, 5 8-fr. for \$7; 10-fr. for \$7.95. J. F. BUGHMAYER, Dept B. J., Iowa City, Iowa.

PROMPTNESS

Italian Queens by return mail. Tested, \$1.00 each or \$11.00 per doz. Untested, 75 cts. each or \$8.50 per doz. My bees are three-banded hustlers. 5A7t

GEO. H. REA, Reynoldsville, Penn.

BEE-KEEPERS

Write us now for our Catalog and get low prices on good, honest,

BEE-KEEPERS' SUPPLIES

Our specialty is making Sections. All other goods up-to-date.

AUG. LOTZ & SON, Cadott, Wis.

10A34t Please mention the Bee Journal.

SOLID GOLDEN QUEENS

Ready for delivery April 1st. Select Untested Queens, \$1 each; Tested Queens, \$2; Select Tested, \$3. You can get only good Queens from the South in the early spring. Book your orders NOW.

H. M. PARKER, JR.

3A7t JAMES ISLAND, S. C.

FOR SALE AT A BARGAIN

90 8-frame Brood-Chambers
200 Heddon Extracting Supers
100 Heddon Comb Supers
100 Heddon Wood-Zinc Honey-Boards
100 Heddon Covers

All in good condition. No disease. Address,

4A2t W. C. LYMAN, Downers Grove, Ill.
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FOR SALE 50 Colonies of Italian and Carniolan Bees for sale. All in 8 and 9 frame 1 1/2 story hives; all nearly new, and bees all in good condition. Single colony, \$6; 5 to 10, \$5.50 each.

WM. J. HEALY, Mineral Point, Wis.
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GEORGE W. YORK, Editor

CHICAGO, ILL., MAY, 1908

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The National Convention at Detroit

It seems to us that it needs only a good honey crop to insure the largest and best gathering of bee-keepers this country ever saw, next Oct. 13, 14, and 15, at Detroit, Mich. Surely Secretary Hutchinson is doing his part to get up an interesting and profitable program. The Michigan State Bee-Keepers' Association is also putting forth special effort not only to insure a large attendance at its own meeting, but also that of the National. The Michigan State bee-keepers will hold their annual meeting at the same time and place.

We hope that all who can do so will try to arrange their work so as to attend the National convention. Mr. and Mrs. Hall, of Iowa, who were at the Denver National convention, expect to be at Detroit. It will be a fine opportunity for every bee-keeper who is so fortunate as to have a wife, to take her next October to the great annual "bee-fest," where it is expected that there will be such a "swarm" of the apiarian clans as heretofore has not been thought possible. Let's all go to the "big bee-meetin'."

Bee-Keeping in New Zealand

We have received a letter from Mr. W. B. Bray, of New Zealand, who has been appointed inspector of apiaries for the South Island of New Zealand. A law was passed in 1906, but under it the box-hive was safe unless it could be shown that it contained disease. The three words—"which are diseased"—spoiled the whole law, so in 1907 the bee-keepers made a fight for it and secured the present law, a copy of which Mr. Bray has sent us.

Mr. Robert Gibb is the other inspector, taking the North Island. Mr. Gibb was

secretary of the Southland Bee-Keepers' Association, while Mr. Bray was secretary of the Canterbury Bee-Keepers' Association. There are two other organizations of bee-keepers in New Zealand—the Hawkes Bay and Wai-kato.

Mr. Bray has promised to send for publication occasional items of interest to bee-keepers from his part of the globe. We doubt not that he will prove to be an ideal inspector, and do his part in getting rid of the bee-diseases in his jurisdiction.

Honey Crop Reports for 1908

The honey crop prospects for this year that have come into this office agree exactly with those that have been sent in elsewhere, a good sample of which is the following taken from Gleanings in Bee Culture for April 15:

"We have just gone over a large number of reports that have accumulated within the last few days. The prospects for a good honey crop are favorable.

"For the North the winter has been mild, and spring not so early as to start brood-rearing out of season to be chilled later on.

"Reports from California are somewhat conflicting. Early in the spring bountiful rains had come, seeming to insure a good honey crop; but since that time conditions have been less favorable in some sections. As it is, we judge there will be from a light to a fair crop; and should the situation change for the better, the crop may be a good one.

"Conditions are exceedingly good for a flow in Texas. It begins to look as if the Lone Star State would redeem its reputation. Its bee-keepers could once boast of a certain crop year after year;

but during the last two years it has been a failure in many sections.

"Reports from other portions of the South are favorable. It is too early to predict any results in the central and northern States."

The Canadian Bee Journal for April contains this paragraph:

"Reports that have come to us thus far give the pleasing assurance that bees are coming out of winter quarters in splendid shape. It is to be hoped that the weather from now on will be favorable for rapid breeding. The heavy and continued snow of this winter, and its manner of melting this spring, was most favorable to the hay and clover crop, in that the frost has not done much heaving, the snow remaining as a protection right up almost to the first of April. The indications all point to a bumper year."

We hope that the "bumper year" for bee-keepers indicated in Canada for 1908 may not only be realized there, but that it may extend all over the United States and other lands as well. The "lean years" in bee-keeping have become rather monotonous of late, and somewhat discouraging, but perhaps 1908 may be the beginning of the "fat years" that honey-producers have been hoping for so long.

Shallow Hives and Pollen in Sections

One objection that has been urged against hives with shallow frames is that bees are more likely to store pollen in sections over them than over deeper hives. Discussing this subject, Editor Hutchinson says this in the Review:

"Actual experience, however, is worth a whole lot of theorizing. I have used brood-frames 12 inches square, also the Langstroth frame, and the Heddon frame which is only a little over 5 inches deep. I never had any pollen stored in the sections in using the frame 12 inches square. With the Langstroth frame I have had some pollen stored in the sections, but it was not a serious matter. With the Heddon frames, extra precautions had to be taken, or there were whole supers of sections spoiled by pollen. For instance, a super filled with sections having partly drawn combs, that is, dry combs with no honey in them, could not be given immediately to a

swarm hived on starters only in one section of a Heddon hive, without the sections being plugged full of pollen. I found that there must be *honey* as well as combs in the sections, or else I must wait about putting on the super until some combs were built and a brood-nest established. This was the case when hiving swarms in one section of a Heddon hive, but very seldom happened when using the Langstroth hive.

"With an established brood-nest in two sections of a Heddon hive, I don't know as I was ever troubled with pollen in the sections, but it often happened when using only one section in this manner."

New Zealand Honey in Europe

The New Zealand government proposes to make a representative display of the Dominion's honey at the forthcoming Franco-British Exhibition to be held in London. The Department of Agriculture has collected a large number of samples in suitable jars, and these will be displayed on a stand in the New Zealand Court.

Confinement of Heat in Brood-Nest

O. S. Rexford says this in the American Bee-Keeper:

"Some things have been said in several bee-papers giving the impression that the winter cluster of bees retains all or nearly all the animal heat and does not warm the space around the cluster to any extent, even within the hive."

He then gives details of an experiment. A colony had over it a double glass cover with a $\frac{1}{2}$ -inch space between the 2 glasses, and over this was placed a thermometer. This thermometer stood at 38 degrees above zero Jan. 31, when the temperature outside the hive was 12 below. Another thermometer over the brood-frames and under the glass, at the farthest side from brood-nest, showed 34 above. Still another thermometer, in the outside packing, showed 26 degrees. He concludes thus:

"I had supposed it was an accepted fact that a cluster of live bees gave off more or less heat at all times, and that a hive with a small entrance could be so protected that the temperature could be raised by the bees in the whole hive just as surely (but not of course to the same extent) as the temperature in a room can be raised by a fire in a stove."

"And I must say that the test I have made confirms me in this belief."

Giving Swarms to Weak Colonies

Wm. W. Case, in Gleanings, gives a plan of dealing with swarms and weak colonies. In an apiary of 100 colonies, say there are 25 very strong, and 25 weak. When the first strong colony swarms, go to the strongest of the weak colonies, remove the queen and cage her.

"Now hive the swarm *right into this weak colony* and give plenty of room for surplus. As all the bees are well filled with honey there will rarely be any dispute. This poor worthless colony has now become, like magic, one of the very best in the apiary, and possesses every requirement for yielding a large surplus,

viz., a medium amount of brood, a large force of field bees stimulated by having swarmed, a good force of nurse bees already in the hive and a first-class queen. Such a colony will rarely swarm again during the season, as, by the time they are again gorged with brood, the honey-flow will generally be so far advanced as to discourage further swarming.

"Now to return to the hive from which the swarm issued. Next day about noon, when the new field bees are out foraging, smoke the bees; and, if you have time, remove all queen-cells and turn the queen taken from the weak colony loose on the combs. She will be accepted ninety-nine times out of a hundred, and no questions asked. If rushed for time, just turn her loose on the combs anyhow, and she will take care of the queen-cells herself."

As each strong colony swarms in turn, repeat the process, each time giving the swarm to the strongest of the remaining weak colonies.

Birds and Bees in the South

"Why it is that bees are so slow to build up and to keep up to a honey-gathering point in early spring, in most localities in the South, is a mystery to many bee-keepers," says J. J. Wilder in the American Bee-keeper. He thinks the birds are the culprits, drawing on the bees to fill out their menu when other insects have not yet become sufficient for the purpose. Powder and shot he has found the only effective remedy.

Protecting Hives with Paper

Some think well of tarred paper, which is dark, for covering hives in spring, but in some cases, it does not work well. E. D. Townsend in Gleanings, reports that in the spring of 1906, S. D. Chapman wrapped every other hive in his home apiary of 200 colonies, after they were taken from the cellar, with tarred paper.

"The ones that were covered with the tarred paper absorbed the heat from the sun to such an extent the bees were lured from the hives on days that were too cold for them to fly. This meant that the colonies in the papered hives at the beginning of the honey-flow in June were not nearly so far advanced as those in hives that were not protected. In view of this, Mr. Chapman has decided that no extra protection is needed if the yard is well sheltered from the winds, and if the hive-covers can be well sealed the previous fall."

In his own practice, Mr. Townsend uses white felt building-paper, which is so cheap that he can throw it away after using it once.

"White paper does not cause the hive to become so excessively hot when the sun shines as the black paper does; and if it has been well folded down and fastened at the bottom of the hive the bees are kept as warm as is necessary. Colonies so protected went through the severe freeze of May 10, 1906, without the loss of a particle of brood, while many colonies in hives not papered lost heavily, and some of these were so greatly reduced that they were able to gather no surplus honey that season. Generally speaking, night is the time

when the extra protection is needed, for the air during the day is warm enough. Since white paper at night is just as good in all respects as the black, it is obvious that it is the better material to use, since it does not absorb the heat of the sun during the day and make the hive too hot."

Prevention of Bees' Drifting

When bees are taken from the cellar in the spring, there is often a tendency toward drifting, many bees from other colonies joining one or more particular colonies that fly in force. It seems to be pretty generally agreed that this may be prevented by making the entrances of all hives quite small as soon as they are set on their stands.

Requeening Colonies Annually

There is no small difference of opinion as to whether it is best to leave the renewal of queens entirely to the bees, or for the bee-keeper to take it in hand. Also, among those who think the bee-keeper should take it in hand, there is a difference of opinion as to whether a queen should be replaced when a year old, or when 2 years old.

It is a somewhat serious matter either to buy or to rear queens and introduce them every 2 years, and the matter is still more serious if it is to be an annual affair. But S. D. Chapman gives in the Bee-keepers' Review a plan so simple and easy that the objection advanced does not stand in the way. He says:

HOW WE REQUEEN.

We will take 100 colonies as a basis. About one week before the close of the raspberry flow, one of my helpers and myself will go to this yard, and take away all of the queens except about 5. These are my breeding queens, and are used the following year to rear drones for next season's use; and, by the way, the following spring, the first time I look over my colonies, I put into these 5 colonies enough drone-comb to make one frame of drone-comb to each colony, and I expect to rear all the drones from these 5 colonies that I need for my 100 queens; and, with my management no other colonies rear any. It takes us 2, some 5 or 6 hours to find the queens.

Now, take notice: The queens are taken away during the honey-flow, and just at the time when the colonies are as heavy as it is possible to have them; and my colonies have from 16 to 24 frames, if they can use them, for a brood-nest; and right here I wish to say that no better queens can be produced by any conditions or methods known to the bee-keepers of today.

WEEDING OUT POOR STOCK.

About 10 or 11 days after taking away the queens is the time we take to weed out any inferior colonies; and I have very little of this to do nowadays. This is done by first going to these inferior colonies, and shaking the bees from all the combs, and destroying all the queen-cells. I then go to one of my best colonies, and take one frame that has queen-cells and give it to this poor colony; and the change is complete.

This day is the day on which to make

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some nuclei, as we will need some queens to take the place of those that are lost. It is also the day on which to make our increase.

Those 95 queens all hatch at about the same time. The practical honey-producer, where running several yards, must have a certain line of work that fits every colony in that one yard, the same day.

WHY THERE IS NO SWARMING.

Many will ask the question: "When these young queens hatch will we not have some swarming?" In taking away the last 1,000 queens, not one of the colonies has swarmed. At this time, they do not hatch until just after the honey-flow.

WHY WE REQUEEN.

First, for the improvement of our bees. Second, it gives us complete control of our bees, in every yard, from start to finish.

Hardly one colony in 100 is ever queenless. Again, it is remarkable how even our colonies are at all times. This is a big thing, as all our colonies are ready for the same kind of work at the same time.

These young queens build our colonies up for winter better than old queens can, and they lay later in the season, giving more young bees for winter.

S. D. CHAPMAN.

Does Mating Affect the Drone Progeny?

"Subscriber" writes that when one of his young queens of pure blood meets a black drone the worker progeny will vary in color, but the drones show no signs of black blood, and are just as bright as the drones of the queen's mother or of her purely mated sisters.

Dzierzon, along with other authorities, held that the drone was in no way affected by the mating of his mother, but there are some who believe differently. The case may be considered from the standpoint of reasoning, and also of observation. The eggs that produce drones not being fertilized, it is certain that they can not be affected in exactly the same way as eggs which are fertilized and produce workers. It sometimes happens that a queen which has never been fertilized nevertheless lays, her eggs producing only drones. In this case certainly fertilization can have no effect, for there has been no fertilization. Neither are the eggs of a normal queen fertilized, and they can not be affected by fertilization unless fertilization has wrought an actual change in the queen herself.

What does observation show? At the present day there is such a mixture of black and Italian blood that satisfactory observations are difficult. The localities are very few where blacks and Italians may both be found in their purity. Yet there are many places where a pure yellow queen may meet a drone of mixed blood, and "Subscriber" testifies that in such a case the drones show no effect of mismating. On the first introduction of Italians, there was abundant opportunity to observe the result when a yellow queen met a black drone, and it would be the natural thing that close watch should be kept. Is there testimony on record that there was plain evi-

dence of such mismating in the color of the drones?

As before hinted, whatever change is produced in fertilization upon the drone, it must be through a change in the queen herself. Has any one observed a change in a yellow queen after meeting a black drone? Some one has said that he has observed a gradual darkening of the color of such a queen. Unless the change in color were quite conspicuous, it would be difficult for one to carry in one's memory the shade of a month or a year ago to compare with the present shade. Also a queen may become darker in appearance through losing her plumage, just as a worker-bee does.

If mating with a dark drone changes the color of a queen, would not a white hen or any other white female show more plainly a change in color after repeated mating with a dark male?

On the whole, does it look reasonable to believe that the mating of the queen has very much effect on her male progeny?

Honey-Analyses—Bulletin No. 110

This office is in receipt of Bulletin No. 110 of the U. S. Department of Agriculture, entitled "Chemical Analysis of and Composition of American Honey," by C. A. Browne, Chief of Sugar Laboratory, including A Microscopical Study of Honey Pollen, by W. J. Young." Few but scientists will understand the explanations given as to the methods of analysis, but every bee-keeper should be interested in the results of the analyses themselves.

Three main purposes in the undertaking of the work are given:

1st, to determine the general composition of our native honeys.

2d, to establish a general range for the variation in the composition of American honeys, which should be of assistance to the food chemist in the examination of commercial samples; this latter being made especially necessary by the recent passage of the food and drugs act.

3d, to investigate and improve, if possible, the official methods of honey-analysis.

No attempt will be here made to give a systematic review of this pamphlet numbering 93 pages, but some points

of interest here and there will be mentioned. Of the 100 samples, 90 were labeled with the name of one definite flower, the other 10 being labeled mixed. But microscopic examination of the pollen grains showed that not a single sample was derived exclusively from the nectar of one kind of flower. Of 14 samples labeled clover, and no doubt supposed to be pure white clover by the beekeepers who sent them, not a single specimen had less than 6 kinds of pollen obtained from other flowers! So it seems that when we talk about pure honey of a particular flower, it is not to be understood in too strict a sense.

Surprise is occasioned by finding alfalfa pollen in Illinois, Iowa, Michigan, Minnesota, Missouri, Ohio, and Wisconsin samples of clover honey. Do bees in these States work on alfalfa so much more than is generally supposed, or can it be possible that some other pollen was mistaken for alfalfa? The latter seems hardly a reasonable supposition when one looks at the illustrations of 48 different kinds of pollen grains, magnified 250 diameters, and varying as much in size and shape as the flowers themselves.

Formic acid "is wanting in the pollen and nectar of flowers and is supposed to be introduced into the honey by the bee just previous to capping the cell." That sounds like an echo of the theory emanating from the late Rev. W. F. Clarke, who asserted that just previous to capping the cell the worker dropped from its sting into the honey a tiny drop of poison. Is there any intelligent beekeeper who holds such a view nowadays?

It is perhaps a common belief that the inversion of sucrose, or cane-sugar, ceases when the liquid is deposited in the cell. Not only does it not cease then, but we are told, "It has happened in the experience of the Bureau of Chemistry that samples of honey taken by inspectors from casks and bottled and sealed have decreased considerably in sucrose content within 4 months."

This bulletin can be secured only through the Supt. of Documents, Gov. Printing Office, Washington, D. C. Send 30 cents in coin or money-order (stamps not accepted), and if the price is less the difference will be refunded.

(Continued on page 150)



Miscellaneous News - Items

Report of the Detroit National Convention

A reporter for the coming National convention is one of the things to be looked after with care. Possibly, not more than 10 percent of the members can attend the convention—the rest must depend upon a printed report of what was said and done. They pay their

money to support the Association, and we owe it to them to give them a complete and accurate report. The best reporter that we have ever employed is Mr. Geo. Angus, of Toronto, Ontario, Canada. He has had a lot of experience in reporting bee conventions, has caught on to the technical terms, and furnishes a report all correctly worded,

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and ready to be handed over to the printer without correction. I am pleased to be able to announce that we have secured his services for the coming convention at Detroit, and those who find it impossible to attend, may comfort themselves in knowing that they can sit at their own firesides, and read exactly what was said and done.

W. Z. HUTCHINSON, Sec.

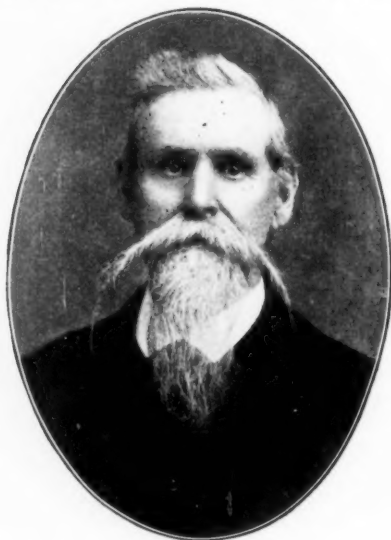
John M. Davis and Apiaries

Among the queen-breeders of America there are few that are older than John M. Davis of Maury Co., Tenn. He has kindly furnished the following sketch which, with the illustrations on the first page and those herewith, gives a very good idea of Mr. Davis and his work in bee-dom:

EDITOR AMERICAN BEE JOURNAL:—

As far back as I can remember we had bees in bee-hives and a few old, round log-gums, and I became much interested in the industrious little insects early in my childhood. During the winter of 1868-69 I saw the Langstroth hive for the first time. This was in the yard of Mr. Calvin Brown, of Decatur, Ala. I doubted the possibility of handling bees as claimed by Mr. Brown, without being too severely stung, but when the weather became warm he demonstrated the fact so clearly that I paid him \$6.50 for an empty hive, shipped it to my home at Athens, Ala., and had a swarm of bees hived in it the following summer. January 1, 1871, I came to this place and took charge of the telegraph office where I worked, with the exception of two years, until 1889.

In March, 1870, I had the Langstroth hive and bees shipped here and placed where my 3-band queen-yard is now located; this was the nucleus from which sprang my present business, and was the



JOHN M. DAVIS.

first Langstroth hive brought into this (Maury) county.

At that time I had but little office-work to do, and having much leisure I spent quite a large portion of my time with my little apiary, which was within hearing of my telegraph instrument. I increased by artificial swarming and

purchase gradually, giving publications on bee-culture the preference over all other reading matter, commencing with the American Bee Journal when published by Samuel Wagner. I bought my first Italian queen from Dr. T. B. Hamlin, of Edgefield Junction, Tenn., and received her by express August 12, 1871, this being the first Italian queen introduced in this county. Owing to there being many black bees near me, I had but a small percent of my first queens purely mated. I adopted the Kohler method, and succeeded fairly well with it, but found it a very laborious and unsatisfactory plan. (For the benefit of some of the present-day amateurs, I will explain that this method is to place all the nuclei containing queens of the proper age to mate in a cool, dark place, a cellar being preferable; also a hive containing many drones. This should be done at night, and the next day each one, including the colony containing the drones, should be fed a few ounces of honey just after all drones from your strongest colony quit flying, and in about 10 minutes place them on their stands. The air will soon be full of bees and drones, the queens will come out also, if ready, and pure mating is assured, unless some impure drones are still on the wing. I kept my drones in the nuclei, which simplified the matter some.

I reared queens only for myself, a few friends, and in experimental work for several years. Dr. Hamlin used a nucleus with 6 or 8 frames about 5x6 inches, which I adopted but soon discarded, and used a frame fitting the 10-frame hive crosswise. This I found to be a convenient though rather expensive nucleus. I used 2 or 3 combs on each side of a thin division-board, thus making what is now termed *twin* nuclei. After the season was over these nuclei were doubled up for winter in hives made to hold 4 frames.

Seventeen years ago I adopted the full-sized 10-frame hive with a thin division-board dividing the brood-chamber. In these I use 2 to 4 combs with a follower, and keep them strong in bees. I am now putting in 100 full-size Langstroth hives with frames half the regular length and 4 nuclei to the hive, letting the bees work out at the 4 corners in opposite directions. I have experimented with these several years and have found them very satisfactory. This is as near to baby nuclei as I believe it is safe to approach.

The compact form makes a warm home for the young queens while awaiting their mating trip, and they begin egg-laying under favorable conditions.

After the queen season is over, remove the thin cross division-boards in each end of 2 hives, remove the bottom-board from one, and double enough nuclei into these to make a colony in each end, by placing the bottomless hive on the other; give each end a queen, and they are ready for the winter, provided the honey-supply is looked after. I wish to have as little as possible to throw away when I quit queen-rearing at the end of the season, which will be as soon as I can rely on getting an average of 40 pounds of honey to the colony. With my present nuclei I shall lose only the division-boards and small frames.

The destruction of the forest made the honey-yield so uncertain here that I was forced into commercial queen-rearing. I bred 3-band and golden queens $3\frac{1}{4}$ miles apart until last year, when, finding my business too exhaustive, I sold the golden department to my son, Benj. G. Davis, who has been an active



BEN G. DAVIS.

assistant in my yards since early childhood, except 2 years spent in California, where he took a peep into some extensive apiaries, and learned some of the Western methods.

My Carniolan yard is about 5 miles north, and is in charge of my son; the Caucasian yard is 7 miles south and is managed by myself; both of the latter are run for queens in a very limited way, the main object being to test their value as a commercial bee. Since having them, the seasons have been fairly favorable, and they have done well, except the Carniolans swarm too much. The true test of a race of bees occurs during a dearth of honey, so I am not prepared to give my opinion, and am willing not to have the requisite dearth.

We have one honey-apiary 4 miles east, and one 21 miles southwest, making 6 in all, containing at this time about 600 colonies, ranging from weak to strong. This includes recent purchases of 50 colonies now being transferred.

JOHN M. DAVIS.

Foundation Without Wiring

E. W. Alexander does not use wires in brood-frames. He says "that he does not hive swarms on foundation, he gives two or three sheets at a time to an established colony, putting them between finished combs, near the brood-nest. This is done before the main harvest is on, at a time when the bees are not getting much more honey than is required for their present needs. In this way there is no sagging. He says that they choose a day when the weather is not too hot, and the flow light, and put in a lot of frames of foundation, sometimes from 500 to 1000 in a day, putting them between frames of brood, removing some combs to make room for

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the new comers, and in a few hours these sheets of foundation will be drawn out into combs, all true and perfect, and with very little honey stored in them."—Bee-Keepers' Review.

Longevity Among Bees

C. P. Dadant says that if bees are unusually long-lived it's because they are lazy. I don't want to believe that if I can help it. Of course, there's no denying that bees live longer when idle than when working hard, and so it may be that some colonies have a longer lease of life just because each worker takes life easy. But that does not conflict with the possibility that there may be such a thing as a colony whose work-

ers live longer than the average, while at the same time working just as hard as the average. And in consideration of the fact that the average life of a bee as a fielder is 26 days or less, the addition of a single day to its gathering career is an important item; for I take it for granted that the added day would be on the fielding end.

Now, what could I afford to pay for a queen which would result in that added day for a whole apiary?

Suppose one has an average crop of 10,000 lbs. annually, at 15 cts a pound, bringing \$1500. One twenty-sixth of that is \$57.00. A queen that would bring that annual increase would be cheap at \$50.00—yes, at \$100.—Stray Straw in Gleanings in Bee Culture.

other work published. You will find your question answered more fully than it could be answered in this department, and yet it is not at all improbable that there will still be questions left unanswered, and please don't hesitate to send them on. It will be a pleasure to answer them.

Almond Paste.

Formula for almond paste: Seven ounces of bitter almonds, 1¼ ounces of orris root, 1¼ ounces of powdered castile soap, 3½ ounces of glycerite of starch, 2 ounces of clarified honey, one dram of oil of lavender flowers, 2 drams of oil of bergamot, 8 drops of oil of bitter almonds. Blanch the almonds, heat them with a small quantity of water to a smooth paste, add the other ingredients and mix intimately.—Chicago Record-Herald.

Honey Lotion for Chapped Skin.

LENA.—Here is a recipe which was popular in England many years ago: Melt 4 ounces of honey and 2 ounces of yellow wax which are put into 6 ounces of rose-water in a double boiler until they become well blended; then, while still hot, add one ounce of myrrh. Before going to bed apply this thickly to the skin. This is helpful when the skin is chapped.—Dr. Emma E. Walker, in Ladies Home Journal.



Conducted by EMMA M. WILSON, Marengo, Ill.

Getting Increase and Honey.

Last July I purchased a 3-frame nucleus of Italian bees, and an Italian tested queen to go with them. A neighbor who is an experienced bee-man taught me how to introduce the queen, and to build up the colony. I fed sugar syrup until he assured me they had plenty. They have 3 full frames at this date of writing (April 8), and are bringing in pollen in a hustling manner. Now circumstances as well as inclination have started me in bees. I hope to make my living and a little over. I have purchased 6 colonies to be delivered in late April or early May, and have put together and painted six 2-story hive-stands and 12 complete hives with brood-frames and sections fixed with foundation. I have purchased "A B C and X Y Z of Bee Culture," have subscribed to 3 bee-papers, and have read them over and over all winter, and have now ordered "Forty Years Among the Bees." Now, I can not find in any of them directions for putting up an inexpensive honey-house, and lumber being so high the strain is beginning to tell on my pocket.

Could I put up a frame good and strong and cover it with Paroid roofing, and paint it white? Having the foundation protected by wire-screen to keep out rats, would such a house be safe in which to store sections and brood-combs?

I have 2 rims with wire sides in which I have planted vines acceptable to bees, and I hope to build up carefully until I have 100 colonies. How can I increase the quickest and safest, at the same time getting honey? By using some colonies simply for increase?

HELEN M. FERRIE.

Hackettstown, N. J.

So far as concerns a building in which

to store sections and brood-combs, you can probably have nothing better than one with walls and roof covered with Paroid roofing. Of course, there must be sheathing on which the Paroid is fastened, but this can be of very cheap material. Whether to paint it white is a question. It would look better, but is probably not needed to add durability, and if you ever store honey in it the darker the color of the outside the better. Mr. G. M. Doolittle, if I am not mistaken, advises black, so that the heat of the sun may have its effect in the better ripening of the honey.

How to increase the quickest and safest, at the same time getting honey, is as the Scotch say, a kittle question. It's a little like making investments. The callow youth plunges into any sort of a get-rich-quick scheme promising to double his money in a year, and loses all he has; the experienced financier is well satisfied with an annual return of 5 or 6 percent, counting safety the element of greatest importance. So it is with increasing bees. One may make a very big increase, and then find all dead the following spring. Remember, you are largely at the mercy of the season. One year you may safely make a large increase, there being a fine flow of honey from early till late, while the next season may be so poor that you will do well to hold your own without making any increase. Of course, you can help out by feeding, but nothing equals a natural flow.

As you say you have ordered "Forty Years among the Bees," I am going to ask that an answer in this department to your question be delayed until you have read in that book what is said about increase, beginning at page 252. You will there find the subject treated in a fuller manner, probably, than in any

An Ex-Stenographer's Success with Bees, Poultry, and Fruit.

Under the above heading appears in the Circle an article written by our bright friend, Miss Frances E. Wheeler. The article is especially to be commended for its moderate tone. While encouraging to many a sister who may be left to her own resources, it does not mislead by setting forth bee-keeping as a gold-mine. The following portion of the article is especially interesting to the sisters of this department:

"I left New York and stenography because my hands gave out, and retired to recuperate in our little home at the head of Lake Champlain, where circumstances eventually developed that left mother and myself alone. I decided that it was worth while to try to make a living there, and keep the home rather than give it up and return with her to the city. We had a very nice apiary consisting of about 50 colonies of bees, a good honey-house, and a complete outfit for handling and increasing the output when desirable; also bee-literature galore, which during the winter I studied faithfully.

"As time went on, one season following another, I began to understand the business; the work became increasingly interesting, and the outlook encouraging. Of course, this point was not reached without many mistakes being made, some losses suffered, much hard work and many disappointments. The chief difficulty met in each department of our business has been, and is, efficient and reliable help. With the bees, it soon became apparent that, to have assistance when needed, some other industry must be combined with it to justify the steady employment of a man and insure his

pay. As the result of much thought and experiment with various branches of poultry, the raising of Pekin ducks for market and breeding stock has proved best adapted to our place and resources, and has gradually developed into a steady and lucrative industry.

The bees have increased to 80 colonies, and we usually obtain between 2 and 5 tons of honey per season. Likewise, the first flock of 5 ducks and a drake have grown to 140 breeders, with capacity of the plant increased to accommodate 2,000 young, and a product of 100 pounds of feathers and \$200 worth of eggs per season. The reason why the duck industry has grown most is because 80 colonies of bees are as many as our locality affords pasturage for (on the principle, you know, of 'more cows, less milk'), and the demand for Cloverhock ducks has kept well ahead of the supply.

Bees Buzz with Their "Buzzums."

"If I have ever nature-faked," said the Rev. William J. Long, the gifted nature writer of Stamford, "I have done so unconsciously. My knowledge, not my veracity, has been at fault.

"You know," resumed Mr. Long, smiling, "anyone may nature-fake through ignorance. Thus:

"One day I was addressing some Stamford schoolboys on the subject of bees, and turning to a bright looking little chap, I said:

"With what part of its body does a bee buzz, Jacob?"

"Jacob answered confidently but ignorantly, launching a tremendous nature fake:

"Its buzzum, sir," he said."—Home Herald.

Yakima Valley Good for Bees.

I live in the Yakima Valley, and would say we certainly are blest with plenty. You might call it a land flowing with milk and honey, fruits of all kinds, etc. In our Valley alone I am sure there was marketed 60 tons of honey. It was published in the local papers that our Inspector Jesse W. Thornton's crop was 15 tons from 500 colonies of bees last year. We got only half a crop. Our honey was of excellent quality and was all sold to good advantage before Christmas. Our market is now bare of honey. The highest the most of our honey brings is 12½ to 15 cents for No. 1, while some fancy is higher.

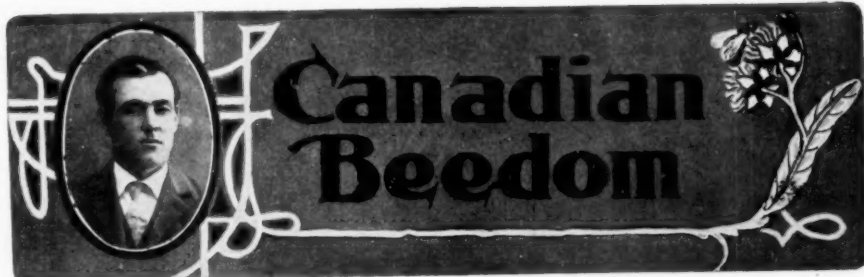
MRS. JESSE W. THORNTON.
No. Yakima, Wash., April 21.

The Birds and Bees.

I think the bees, the blessed bees,
Are better—wiser far than we.
The very wild birds in the trees
Are wiser, far, it seems to me.
For love and light and sun and air
Are theirs and not a bit of care.

What bird makes claim to all God's trees?
What bee makes claim to all God's flowers?
Behold their perfect harmonies,
Their common board, the common hours!
Say, why should man be less than these—
The happy birds, the hoarding bees?

—JOAQUIN MILLER.



Conducted by J. L. BYER, Mount Joy, Ont.

Wintering Bees Without Loss.

In a letter lately received from Allen Latham, the writer is jocularly rebuked for asking how his bees had wintered—"he who says that one can be as sure of wintering his bees as of wintering his cattle." He further remarks that in his locality the bees have flights every month, although once they were shut in for possibly 5 weeks. No doubt he has thoroughly solved the wintering problem for his latitude, but at the same time believes Mr. Latham will concede that there are more obstacles in the way of successful wintering of bees in the Northern States and Canada than is the case in Connecticut. Our bees never had even a partial flight from early in November until March 12, and from the latter date were shut in till April 6. Yet at this date of writing 2 of the yards appear to be in good condition, the Cashel yard of 86 colonies just visited, being all alive but one. The Altona yard of 40 colonies has a different story to tell, and it is in connection with the history of this apiary that I wish to submit some facts, and in a sense solicit Mr. Latham's advice as to how to be sure of wintering every colony every year without loss.

This apiary was started 7 years ago, and up to this winter the losses have not averaged to per cent from all causes, such as queenlessness, spring dwindling, etc. Last year, a season of excessive losses, every colony in the yard wintered well, and they were so strong that radical measures had to be taken to prevent swarming in fruit-bloom. Not a pound of syrup had been fed the previous fall, the stores for wintering consisting mostly of buckwheat honey. In the other 2 yards wintering on similar stores, plus a little honey-dew, the loss was quite heavy. Last fall the buckwheat yielded no honey, and following a total failure of the clover crop, brood-nests were light. Especially was this the case at home and at Cashel, and as a result, sugar syrup had to be supplied liberally.

Out of 70 colonies at Altona 30 were heavy with honey, and for ought I could see, the stores of these 30 colonies were just the same as in other years, no honey-dew, to the best of my knowledge, being present. Among the 40 that were fed, were 8 4-frame nuclei, yet the whole 40 have wintered in good condition. As to the 30 colonies heavy in honey and fed no syrup, they are in a condition never before met by me in all my experience with bees. For some reason the honey granulated in the combs, and the bees actually died with dysentery and starvation, while the bulk of

their stores was solid in the combs. Whole combs of honey have the cap-pings chewed off, the bees being in much the condition of shipwrecked sailors famishing while surrounded by water. On examination this granulated honey appears to have an excess of pollen and that is the only reason I can possibly think of as being responsible for the trouble. Out of the 30 colonies, 14 are dead and at least half a dozen more are sick unto death. The point I wish to make is this: In view of the uniformly good wintering of that yard in past years, I wonder if I am premising correctly when I venture to guess that if Mr. Latham had been in my position that possibly he would have done as I did—leave those 30 colonies with their natural stores.

Finding Queens After Harvest.

C. W. Dayton says in the February Review that it is easier to find queens after the harvest than before. That may be right for California, but Mr. Dayton, as far as Ontario is concerned, I beg to differ from you. All things considered, methinks that to hunt the queens out of 20 colonies before the harvest would not be as big a proposition as to hunt out 5 after the honey-flow. All of which goes to show what "locality" has to answer for.

Feeding Sugar Syrup for Winter Stores.

I dislike advocating wholesale feeding of sugar syrup for winter stores, and in some seasons no sugar is necessary for successful wintering, but in excessively poor seasons like the last, when so much pollen is gathered, and this condition is followed by a severe winter, the sugar is almost absolutely necessary to bring the bees through in good condition. Last July, 20 Carniolan queens were bought and introduced in 2-frame nuclei. Owing to almost total dearth of nectar all the season, and the fact of the writer's being away quite a great deal, these nuclei had no chance of building up strong. Most of them went into winter quarters on 5 Jumbo frames, although 4 frames would have accommodated the bees easily. These frames were fed nearly solid with sugar syrup, and today those 20 colonies are among the best that I have. Not a bee was ever noticed leaving these hives from early in November till March 12, and while the well-known hardiness of the Carniolans may help to explain results, yet I believe in a large measure the nature and position of the stores was

responsible for the excellent wintering of these nuclei.

LATER.—Today (April 15) the weather moderated enough to allow a hasty examination of the home apiary, and out of 106 colonies I find 6 dead and that many more with only a few bees left. The trouble is just the same as at the Altona yard—granulated honey, and in every instance the affected colonies were last fall heavy in natural stores and fed no sugar syrup. As I write, I have been called to the 'phone by a friend who tells me he has just come from visiting one of our well-known bee-keepers—a bee-keeper who has been remarkably successful in the past in wintering his bees. Yet my friend tells me that over half of his bees wintered out-doors are dead, and of the balance not more than half a dozen colonies are in good condition.

On my asking for cause of the disaster, I was told that granulated honey was responsible, even the combs where the bees had clustered were granulated solid, and the bees were dead with great quantities of this solid article in the hives.

While we have had a severe winter, yet I hardly think that factor has any bearing on the case, as previous winters have been just as cold and no granulating of the honey took place. Personally, I would be glad if some one would advance a reasonable solution as to the cause of the honey granulating in such a wholesale manner. In this connection it is worth noticing that under conditions which caused the honey to granulate, the 2 to 1 sugar syrup, with no acid or honey added, wintered the bees splendidly. Seriously, I wonder if any one ever had much trouble with sugar granulating, if made either thick or thin, provided it was not fed too late in the fall.

Apiary of Mr. D. Meuser.

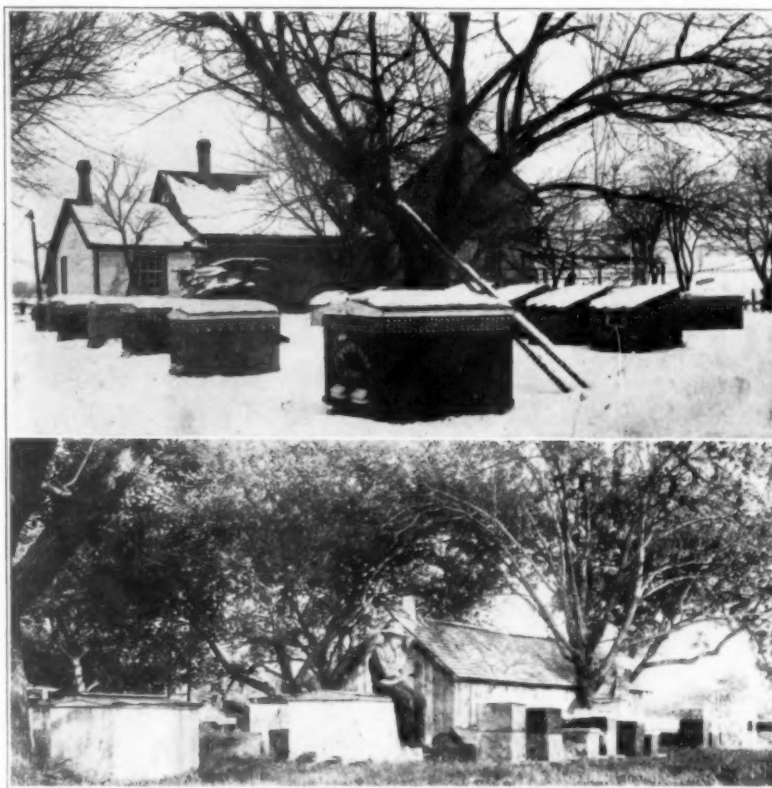
The pictures herewith are two different parts of the same apiary, so that the colonies shown on the summer stands are not the ones that are packed in the winter hive-cases.

The apiary consists of 55 colonies, and are all wintered on the summer stands. The hive-cases in the first row are made to hold 4 colonies placed back to back, allowing 4 inches of space for packing all around, and there is room enough for 12 inches on top, but I use a screen-bottomed box 4 inches deep, and the same size as the top of the hive, filled with dry sawdust. I first remove the propolized cloth and put on a clean one, then set the box with sawdust directly on top, and the flat hive-cover is put on top of that, but not tight-fitting. There are still 7 or 8 inches of empty space between that and the roof of the hive-case. The hive-cases in the second row were made about 20 years ago, of rough hemlock lumber, and are still as good as new except the roof. The packing is left around the hives in the old cases all the year around, and some colonies have occupied the same hives for at least 15 years, to my knowledge. I use old carpets and chaff cushions for top packing on these hives, but the chaff seems to get damp and moldy, whereas the sawdust on the others keeps dry.

Bees had their first flight March 12, with still 2 feet of snow on the ground at the time, but there was a hard crust on top so that few bees got chilled. All colonies were living at that time in spite of the fact that they had been buried in 2 and 3 feet of snow for about 4 weeks, with zero weather about half that time and twice 24 degrees below. Notice the storm-door and alighting-board combination, made of 2 pieces hinged together in the center with a small butt hinge. When open it acts as an alighting-board, and when closed the outer

tributions on the subject are naturally of a controversial nature, yet with comparatively few exceptions contributors to bee-papers seem to be actuated by a spirit of willingness to "agree to disagree," no matter how diametrically their views may be opposed to those of opponents. To the writer's mind this is as it should be, as I fail to see any good purpose accomplished by the sarcastic, vitriolic effusions that appear once in a great while in some of the papers.

In the April number some of the views of Mr. Chrysler on the matter of



WINTER AND SUMMER VIEWS OF THE APIARY OF D. MEUSER.

piece acts as a storm-door. It certainly served its purpose well the past winter in keeping the entrances free from snow and ice.

The weather has been very cold and backward here so far, but bees are flying today, and all colonies are still alive.

D. MEUSER.

Elmwood, Ont., April 14.

Controversialists Should Keep Cool.

The editor of the Farmers Advocate, commenting on some rather pungent letters on a controverted subject, sent by subscribers for publication in his journal, remarks, "It is a good plan, when writing letters for publication, especially on controversial subjects, to draft them out, lay them aside for a week to cool off, and then re-write." Pretty good advice even for writers for bee-papers, as well as for contributors to the Farmer's Advocate—advice, by the way, which is not likely very often followed.

However, as bee-keeping is notorious for its many seeming contradictions, con-

co-operation were given. In the March 20 Farmer's Advocate the discussion is continued by Mr. Brown, another past-president of the Ontario Bee-keepers' Association. As will be noticed, Mr. Brown takes somewhat different views than Mr. Chrysler:

CO-OPERATION WITHOUT ORGANIZATION.

EDITOR "THE FARMER'S ADVOCATE":—

In my humble opinion, co-operation in marketing honey is a matter that requires considerable forethought, for many reasons. One reason is that we do not have a regular crop of honey every year to harvest or dispose of. Again, organization has to take place among the honey-producers before co-operation can be established. Bee-keepers are only human beings, and, as a rule, would not care about entering into a thing they did not see their way clear to get some benefit from.

Of course, the bee-keeper who is sure of having a crop of honey to dispose of every year, over and above what his home market demands, would say co-

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operation for him is all right, but, as to the bee-keeper who can dispose of his honey in the neighborhood of where it was produced to good advantage, no co-operation is necessary for him. For the bee-keeper who has to rely on the wholesale houses, ship long distances, or send to a foreign country to dispose of the product, co-operation should be beneficial. But, sir, when it comes to the question of ways and means, there is where the shoe pinches. Would the profits to be derived from co-operation be sufficient to warrant those of the class which I have just mentioned in going to the expense of entering into a body corporate in Ontario? I would say, I think not. Of course, some of the very large honey-producers in South-western Ontario, who are reasonably sure of a surplus crop to dispose of every year, may think different, and may be right in thinking so. But have not they already opened up a market—and a good market, too—for their supply of honey across the sea? Mr. McEvoy says they have.

And now, sir, as I may not be called upon to touch this subject again, I would advise all honey-producers, without exception, to look closer after the home market, by trying to get their honey, as much as possible, from the apiary direct to the table of the consumer, without the intervention of the middleman, and always to aim at producing the very best article possible, and you will be surprised how the home market demand will increase, to the benefit of both producer and consumer; and, in a word, co-operation between producer and consumer could and would exist, without the kind offices of a well-paid official to live on the fat of the land.

Prescott Co., Ont.

W. J. BROWN.

The following is also taken from the Farmer's Advocate. I am acquainted with the circumstances mentioned, and can vouch for accuracy of figures given:

FARMER BEE-KEEPER AND ALSIKE.

When we consider what a palatable and wholesome food is honey, and how little expense and labor is involved in securing and caring for a few colonies of bees, it seems passing strange that so few farmers take up bee-keeping. The bees work for nothing and board themselves; and, besides storing a large quantity of surplus honey for the family and for sale, do a valuable work for the farmer by pollenizing his clover and fruit bloom. In one neighborhood, where bees are kept, farmers sold up to \$75 worth of alsike clover seed per acre last year, largely owing to the work of the bees, and one bee-keeper in the same section sold \$3,000 worth of honey.

Bottom Starters in Sections—Foundation.

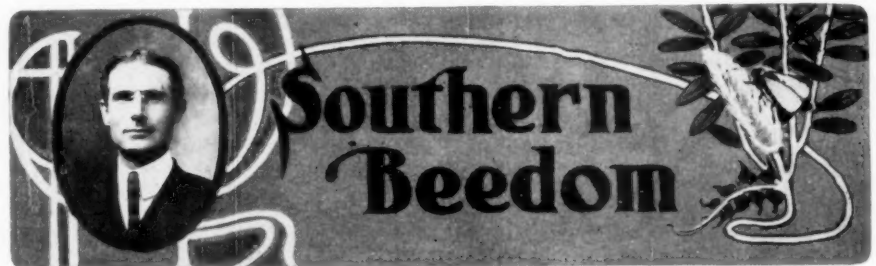
A perusal of what the Editor and Mr. E. F. Atwater have to say touching bottom-starters in sections (page 101), moves me to say that for some people bottom-starters are a decided advantage. But for those who cut the foundation fairly accurate and hang it the right side up, bottom-starters are a useless bother, and a worrying waste of time. I tried them on a pretty large

scale for several years, marking the sections so there could be no mistakes made. At the same time, in the same yard, and in every other respect under the same conditions, I had about the same number built without bottom-starters. And so far as I could see there was no difference in the finish of the sections. The foundation should be cut pretty accurate, just so that it will swing clear of the section and leave about 3-16 of an inch space below for sections 4 1/4 inches deep. A taller section needs more space under the foundation.

Right here I want to mention the fact that all the foundation I ever saw was stronger one way than the other. That is, it would sag less if hung one

way than the other. This is a point that no one can afford to ignore. Often when the weather is cool the outside of the outside sections is sadly neglected. This will cause the foundation to curl outward, besides being unfinished when the others are completed. Dividers properly made and properly used correct all this, if the other conditions are right. If slats are used in the construction of dividers the spaces between the slats should be 1-5 of an inch. The dividers provide room for lots of bees to keep up the necessary heat for comb-building and capping, without which it is impossible for the work to keep pace with work where the heat is right.

Alymer (West), Ont. S. T. PETTIT.



Conducted by LOUIS H. SCHOLL, New Braunfels, Tex.

"Well Enough for a Man."

Men do not know how to comment on woman's doings in bee-keeping, I admit, so Miss Wilson is quite right (page 106) in calling my comment, "well enough—for a man." But how could I have been expected to do better under the circumstances? The *circumstances* are these:

There's "a woman" here at our house who helped me produce and market over 10 tons of honey last season. She it was that put nearly all the foundation in the frames—some 6000 in number—and the work was done so deftly and quickly that it did not take long to finish the job. And she didn't have anybody to look after all the other things either—*did all of the things herself*.

We use spoons with a "crooked neck" and a "triplicate frame rack" that will be described some time, that enables fast work being done. All this had something to do with my comment. I don't mean to cast any reflections on anybody, either.

Those Cyprian Bees.

Several times I have been asked to describe the different races of bees, especially since my experience with 8 different races has extended over several years and in different localities, but time has not allowed it except in a very brief way. Upon this, one correspondent comments as follows, and describes the "Cyps" very much like I have found them:

DEAR MR. SCHOLL:—At last, on page 42, we have the long-promised discussion of the different races of bees! But how brief. Anyway, a few crumbs "is better than no bread." I'm still sticking to the "Zips," or more properly, they still "stick it" to me. Last spring I was going through a hive of "Zips," watering their candied combs of honey,

and "all went merry as a marriage bell," and I was just thinking "what fools these mortals be"—the little Cyprians are business-like, and tend to their own affairs, allowing others the same right, and "don't sting at all."

About that time, just as I was taking hold of a frame, one of the innocent little "misses" interposed herself between finger and frame. Her sting wasn't very long—not over a yard—and her poison-sac wasn't very hot—not hotter than cayenne pepper seasoned with molten iron—and so out of consideration for the bee (sting and poison-sack) I gently and hastily (and I've since thought not gently enough, and too hastily) let the frame drop. In doing so, another innocent little miss was crushed under the end, and 20 dozen or 200 million dozen others were jolted just ever so little. I had but one thickness of hickory shirt on my back and arms. There was a hole in the top of my hat large enough to insert the end of my finger. The hybrids had never found it.

The "Zips" are the wisest and most business-like that ever I saw, felt, or dreamed of, and meddlesome withal. They have the most perfect system of wireless telegraphy, and rapid fire communication. One Cyprian found that hole; instantan, it was reported to half the bees in that hive. It seemed they were disturbed, and I was the cause of it. I thought nothing but that the disturbance should cease, and as soon as convenient. So without taking time to replace the frame, super, and cover-board, I hastily retired to a patch of tall weeds. The Cyprians didn't seem, with all their wisdom, to understand that I was anxious to cease disturbing them. Not till I had stood on my head in the grass—that seemed to quiet all that were inside my hat.

I ran my hand through my hair, and the bee-stings—it reminded me of a

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Tennessee stump-field. As to the flying bees, there was a tank (water-pool) near by, and I recollected that it had been several days since I had taken a bath, and I found out that was just what the bees were urging me to do, for they went home as soon as they had me satisfactorily under the water. The "Zips" are great, and I love them (mostly by telepathy).

The above colony of Cyprians referred to seem perfectly gentle as long as none are injured, and the hive is not jolted. I have several times gone through the hive, handling every frame, and not gotten a sting, and transferred them once and extracted the supers twice without a sting.

I have another colony from an imported queen of "gentle strain," and I've seen them fly out to investigate when I have simply laid my hand on the hive. And sometimes when I do not even touch it. But if they fulfill their promise of honey gathering, I think I'll keep Cyprians. Some, anyway. It is largely honey that I want, and I don't mind a little fun and a good laugh.

Santa Anna, Tex. J. E. McCLELLAN.

Not More, but Better Bee-Keepers.

I was pleased with the comments in an editorial footnote to Mr. Edward Corwin's letter, headed, "Making More Bee-Keepers," in the March issue. It is not more bee-keepers we want, but better ones. That's the point exactly. I should like to see the time come when every man (and woman, too,) that keeps as many as a half dozen colonies of bees, is a constant reader of the American Bee Journal, or some other bee-paper, and keeps his bees, in good, movable-frame hives. It's not the practical bee-keeper that reads the bee-papers and looks after the needs and wants of his bees that ruins our markets by selling dark "honey-dew" for "good, pure bees' honey," or that sells "bulk" comb honey that has had several generations of brood reared in the combs, for first-class "chunk" honey. It's the man that won't read bee-papers that does this. It is not always the farmer bee-keeper, either.

L. B. SMITH.

Rescue, Tex.

Queen Behavior—20 Days from Eggs to Queens.

I had 2 black colonies of bees that I wished to requeen with Italian queens, or kill in the effort, and had the following experience while doing it:

On March 19, I dequeened one black colony to make it rear queen-cells for both colonies, keeping the queen laying in the other colony. On March 22, I "budded" the cells, using larvæ 2 days old, making the queens 5 days on the road, and were due to hatch on April 2. I dequeened the other colony 3 days before so as to give me one day to play on. I put the cell in the dequeened hive on the 15th days of their age, and expected the queens to hatch on the 16th day. Three days after they were due to hatch I decided to see what kind of Italian queens I had produced, and upon opening the hives I discovered that I had no queens at all. This was in the morning of the 19th day from the egg. In

the afternoon of the same day I went to one of the hives, opened it up, and discovered that one of the cells had hatched. I quickly closed the hive and went to the other hive containing the cells, and found both cells unhatched. I closed the hive for more waiting, feeling sure of my hatched queen.

The next afternoon at 2 o'clock I was anxious for another examination. Going to the hive containing my hatched Italian queen to look her up, I went through the hive, but not finding her, I concluded that I had missed her, or that she had been decapitated, as black queen-cells were present. I proceeded to go through again, when I discovered a little crippled-winged black queen present, and the Italian queen killed, and nothing doing! I leisurely sauntered over to the other hive containing 2 Italian cells, and pulling out one frame I saw a young Italian virgin turn down on the bottom of the frame in the hive just in front of me. I quickly jostled for the cells to see if both had hatched, and to my delight discovered that only one had hatched, and that the queen in the other was just about $\frac{3}{4}$ cut out.

Quickly taking the frame with the hatching queen, bees and all, I started for the other colony, and before I could

reach the hive the queen was half out of the cell and hung at the shoulders, the worker-bees pulling at her with all their might, making her squeal vehemently. I quickly put in the frame and closed the hive. Two days later I visited the hives and found 2 beautiful virgin queens playing over the combs. I was successful with both black colonies whose queens are laying at this writing.

There is nothing wonderful about this at all, except that it was 20 days from eggs to hatched queens. Our orthodox "bee-dads" tell us "kids" that it is 16 days from the egg to the queen, but here is one instance positively and absolutely, where it was 20 days. Do not accuse me of juggling with dates or miscounting—nothing of the sort occurred. Then do not suppose that it is my first effort at queen-rearing, for I have been rearing them for years.

In order to make a puzzle for Dr. Miller, G. M. Doolittle, etc., I will allow them to inform the bee-world why it was 20 days from the egg to the hatched queens. I have the reason in the demonstration and will give it later if necessary, in case the question is not answered, and our "Grand (bee)papas" fail to make a good guess.

T. P. ROBINSON.

Bartlett, Tex., April 13.



Large vs. Small Hives

BY ADRIAN GETAZ.

Some 15 years ago quite a discussion took place in the bee-papers as to which was the best size of hives to use. The majority of writers strongly advocated the 8-frame hive, and the rest the 10-frame. The Dadants were almost alone in advocating a brood-chamber larger than 10 Langstroth frames. Remember that at that time nobody thought of using 2 hives or 2 bodies, one upon the other, for a brood-chamber. Commenting upon the situation, Mr. Chas. Dadant wrote thus:

"We are now alone in advocating a brood-chamber larger than 10 Langstroth frames, but we are in the right, and the time will come when our position will be vindicated."

Well, Messrs. Chas. and C. P. Dadant are now more than vindicated. With one or two exceptions, every bee-keeper of note now advocates the use of 2 hive-bodies for the brood-chamber, and some want even 3. Two bodies of 8 frames each make a brood-chamber larger than the one used by Messrs. Dadant.

So the question now has completely changed. It is no longer a large or a small brood-chamber, but it is, Shall we use a large hive or pile up 2 or 3 small ones together?

THE TWO SYSTEMS COMPARED.

During the last 2 or 3 years, several of our largest bee-keepers have been induced to give in detail their methods of bee-keeping, or rather their systems of management. I began writing this article with the intention of giving a short description of each one, but soon found out that it would be an endless repetition, and that one description would cover all.

1. Beginning with the early spring we find that nearly all have to feed their bees more or less. It must be understood that only one hive-body is used to winter the bees. It does not take much honey to feed the bees through the winter, but it takes a whole lot of it to feed the brood in the early spring. It seems by what they say that an 8-frame hive can not hold enough for both purposes, and that a 10-frame has not room enough for both the honey and the space needed by the queen if she is to do her best. The upshot is that the hive should contain only a moderate amount of honey, so as to give the queen sufficient room, and the apiarist must feed enough to make up what is necessary. Mr. Alexander goes even farther than that. He extracts in the spring nearly all the honey that may be in the hive, so as to give the queen plenty of room, and feeds the colony every 2 or 3 days what is

needed to keep the brood-rearing at its best. That's a good deal of work.

2. By and by the brood-nest is full, or nearly so. The second story is added, if possible full of already built combs to save to the bees the work and honey necessary to build them.

3. The honey-flow comes. With it the swarming. At this time some remove the added story, putting all the brood into the lower one. The majority, however, leave it until the end of the honey-flow.

4. Most of the bee-keepers practice "shook"-swarming. That is, merely dividing. All the brood is removed to a new stand, and the colony has to rebuild a new brood-nest. Most of the bees are shaken from the combs, so as to leave as many as possible on the old stand. The supers are added.

5. At the end of the flow the second stories are taken off, and the combs must be cared for and put where the moths, mice and mildew will not injure them. The supers are also taken off.

6. The last operation is to feed, if necessary, and put the bees into winter quarters.

THE DADANT SYSTEM.

Now, let us compare the above with the Dadant management, item by item:

1. In the early spring no feeding or fussing of any kind is necessary. The hives are large enough to afford room for both the brood and the honey necessary to feed it.

2. For the same reason no second story is needed. That means a saving of its cost, and the time of taking to the apiary and putting on, including the necessary combs.

3. In working for extracted honey a colony lodged in a Dadant hive will seldom swarm, only 2 to 5 out of 100 every year, so that it is not worth while to watch for the swarms, or shake the whole apiary to prevent them.

4. In working for comb honey the swarming is restricted by having a large brood-nest, but not entirely prevented. The colonies that do not prepare for swarming may be let alone. Those that do can be shaken or divided, or the queens can be caged or removed. The caged queens can be released when the colonies have been without unsealed brood during a week, or even only 4 days. Or another queen may be given or the colonies allowed to requeen from their own cells.

So far as the work is concerned there is but little difference between the two processes. But there is quite a little difference in the surplus obtained. Shaking the colony and taking away its brood and combs means that it has to rebuild a brood-nest. That rebuilding costs the bees, or rather the apiarist, about 30 pounds of honey. At least, that is what the difference in the surplus amounts to in my locality. In a good locality where 100 or 200 pounds per colony can be obtained, 30 pounds more or less does not matter (?), but in mine, these 30 pounds or so often make the whole difference between some surplus or none at all.

5. No second stories are to be removed and taken care of. This taking care of is more than may be thought of at first. It is easy enough to put the empty stories on a wagon, haul them all

and pile them up. But the extra combs may give trouble. Whatever honey is in them must be extracted, and they have to be kept safely against moths, mice and mold.

6. Feed is necessary. This will be less often with permanent large brood-chambers, than in the other systems of management, yet it may have to be done occasionally.

Knoxville, Tenn.

Requeening Colonies Each Year

BY C. C. MILLER.

MR. EDITOR:—I have always practised allowing each colony to attend to its own superseding, unless where I wanted to replace a queen with a better one, and it has always seemed to me that there should be a very considerable gain in prospect to warrant one in taking the matter into his own hands and being to the trouble of rearing or buying new queens to be introduced every alternate year. Then came S. D. Chapman in the Review, saying he renewed his queens not every 2 years but *every* year, and all the part he took in the case was simply to remove the old queens. Giving particulars, he said he removed the queens one week before the close of the raspberry flow.

Now I am practically certain that there would be no surer way for me to force every one of my colonies to swarm with virgin queens than to remove the old queens a week before the close of the raspberry flow. It would be an exceedingly foolish thing for me to do. Yet Mr. Chapman is no "spring chicken" in the bee-business, and as I had great respect for him, and confidence in his word that in his case there was little or no swarming, I wrote for light upon that one point. Here is his answer:

DR. C. C. MILLER:—In reply to your question in regard to the time of the raspberry bloom, it is usually from the 5th to the 10th of June, and closes near the middle of July. Of course, the season may be earlier or later than this. Yes, I take the queens away about one week before the close of raspberry; just for the reason that it is more convenient for me to have them hatch at this time. The queens do not hatch till about one week after the harvest, and at a time when no honey is coming in.

Just as soon as the raspberry closes, I start the extractor, as I need 1200 of these combs after they are extracted to make 150 colonies increase. I save keeping on hand 1200 combs. I put away 500 colonies in the fall and start at the beginning of the harvest with 350 good, strong colonies by doubling the lighter colonies at the beginning of the harvest.

You say if you should unqueen one week before the close of the harvest your bees would all swarm. I have no doubt of this. Let us talk this matter over.

As I understand, you run almost entirely for comb honey, while I run exclusively for extracted honey. Now it depends entirely upon the management we give our bees previous to and during the harvest. You see, as soon as

the colony in the spring becomes strong I put 2 frames of brood in an upper story and place it above, and when they are well started in this I raise it up, placing another story under it. There is the point. After a colony becomes strong I give so much room that it does not look to them as if they could ever catch up. This keeps every colony working vigorously. Of course, towards the latter part of the harvest I let them get closer to me. With this management I can take away 100 queens any time, letting the young queens hatch during the honey-flow, and I would not expect to exceed one colony to swarm. With us, where the queens hatch one week after the harvest, and not any honey coming in, they will not swarm.

If I have not given the desired information, come again. I would be glad to have you. S. D. CHAPMAN.

Mancelona, Mich., April 7.

That clears the matter nicely. My good friend is in error in understanding that I think removing queens a week before the close of the harvest would make all my colonies swarm. If I wrote that, I blundered in expressing myself. What I meant to say was that it would make all my colonies swarm to remove the queens one week before the close of the raspberry flow. As I understand it, the close of raspberry flow is the close of the season with him. With me the honey-flow continues many days after the close of that flow, which ends here much earlier than the middle of July.

If I should remove queens a week before the close of the season, I don't know but the plan would work here, even when working for comb honey. The great trouble would be for me to tell in advance when the close of the flow might be expected. Sometimes there will be a let-up the middle of July, and it will look as if the end was about to come, when the flow starts afresh and continues another month.

There is no question that for those who wish to take superseding into their own hands, Mr. Chapman has given a very excellent plan, and in any case there are some distinct advantages in it for any one who can tell with reasonable certainty a week beforehand when the season will close. I am glad publicly to express my thanks to him.

Marengo, Ill.

Wax-Moth, Alsike Clover, Bee-Diseases, Etc.

BY G. M. DOOLITTLE.

A correspondent says he has been persuaded to take the American Bee Journal, and through reading it he has a bee-fever on. He wishes to start bee-keeping in May, but is not fully able to decide just what he will do, adding, "If you will answer the enclosed questions through the columns of the American Bee Journal it will help me much in deciding."

His first question is this: "Is there danger of losing colonies by moths or other insects?"

The larva of the wax-moth is about the only real enemy the bee has in the insect line in our Northern States. These

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feed upon the combs, generally starting in those which have more or less pollen in them. As these larvæ grow they change the combs by their consumption and development from the nice, symmetrical cells for brood and honey, into a mass of webs and cocoons. However, I have never known of a strong colony destroyed from this source, especially bees of the Italian race. In fact, where pure Italian bees are kept exclusively, these pests pretty much disappear. Still, combs not protected by bees are always subject to their ravages, and should be looked after during warm weather.

If signs of worms appear the combs should be placed in a tight barrel, box or room, and fumigated with burning sulphur, having all fixed so there is no danger from fire.

For brood-combs which are stored away for safe-keeping during warm weather, I generally use one-fourth pound of sulphur for every 50 cubic feet in box or room in which the combs are stored. After once treated in this way, I have never had any further trouble so long as the box or room is kept closed, providing the same is tight enough to prevent the female or mother from entering and depositing more eggs on the combs.

SOWING ALSIKE CLOVER FOR BEES.

The next question asked is, "Will it pay me to sow alsike clover for the bees? Does this clover ever fail in giving nectar when in blossom?"

I have my doubts about it paying very largely to sow or raise any plants or trees for their honey alone; but when we consider that alsike clover makes the best of hay, it will surely pay to sow this kind of clover. Nearly all of the farmers in this section sow it in their fields for hay, and are glad of the apiarists' bees to fertilize the bloom so it will form seed, so the bee-keepers in this section do not sow it unless said bee-keepers have farms, and wish the clover to feed stock.

Regarding its nectar-giving qualities, it is as sure as any of the clovers. If the weather is good, and the state of the atmosphere right, large quantities of honey are obtained from this, and the white clover which blooms at the same time. But some years none of the clovers seem to give the bees anything except pollen. A cold, wet season, with a long-continued northerly air, seems to be against a yield of nectar from any of our honey-producing flora, and especially that of the clovers.

HONEY AVERAGE PER COLONY.

"How much honey should an Italian colony average?" is another question. Very much would depend upon location, the management, and the weather while the flowers were in bloom which gives a surplus crop of nectar. Taking the localities where bees are kept throughout the United States, 50 pounds per year to the colony, on an average, among bee-keeping specialists, is about what they secure. My average during the past 40 years has been not far from 80 pounds, mostly comb honey. Best average in any one year was 166 pounds; poorest, 30 pounds. But I am not confined to clover alone for a money-yield, as the yield from basswood is far better in this lo-

cality than from the clovers, and the clover-yield is often exceeded by the flow from buckwheat.

DISEASES OF BEES.

Then comes the question, "Are bees seized with any diseases or epidemics?" Yes, to a certain extent. They have their wintering troubles, when the bees are seized with diarrhea, on account of being confined to the hive by cold weather longer than they can hold their feces, and if the cold weather continues long enough they not only soil their hives, but their combs and themselves as well, till the whole colony perishes in a deplorable state. However, with cellar-wintering, which is the better, where continued cold is likely during the months of November, December, January, February and March, there need be little fears from this source, for the even temperature of the cellar during this time allows the bees to subsist on very little honey, often not more than 5 to 7 pounds for these 5 months, so that the bees do not suffer at all, and come out as clean, healthy and bright as they do in a section so far south that they can fly every month of the year.

Then we have what is termed "bee-paralysis," which causes the bees to shake and tremble, and the abdomen to swell and fill with liquid till nearly bursting, when they crawl all about the hive-entrance and die, till in bad cases the hive is depleted of bees except the queen and a few attendants, when robber-bees or the wax-moths come in and the colony is ruined. In all cases of paralysis which is bad enough to cause the death of many bees during the spring and early summer, the colony is so weakened that it is not a success at securing a surplus of honey. But this disease seldom amounts to much in the northern portion of the United States or Canada; and, if I am correct, the South is much more free from it than was the case 15 or 20 years ago.

Besides the above, we have black and foul brood, either of which is much worse than all spoken of before. But the progressive bee-keepers of to-day are generally more than a match for any or all of the present known diseases among bees. To enter into a treatise on the diseases of bees and how to cure them would be too long for any one article for a bee-paper. Almost any of the bee-books will tell you further in this matter.

PRICES OF BEES.

Lastly I am asked, "What price should I pay for a colony of bees in a movable-frame hive along about the middle of May, or in the fall, should I conclude to wait about buying any bees till that time?" They are usually sold at from \$4 to \$6 in the fall, and from \$8 to \$10 in the spring, by those dealing in bees. Some bee-keeper living near you might be persuaded to let you have a colony for less. The reason for the difference in price is that there is quite a risk in wintering, as explained above. If 10 or more colonies are purchased of one party, the price would likely be cut somewhat, but if you can get a good colony the middle of May for \$8 you would have a chance to get your money back the first year. In an average season, and in an average locality, such a col-

ony of bees should give 50 pounds of honey besides one good swarm. The section honey should bring readily 12 cents per pound, or \$6, and the swarm worth \$4, at least, in the fall, which would give the purchaser more than his money back, even if he lost his old colony, or 50 percent of his bees during the next winter.

Borodino, N. Y.

Some Observations in Bee-Keeping

BY I. D. PEARCE.

In my early years I was taught to observe passing events in a general way, by which I have found it an easy step to make note of things usual and unusual in my own sphere and its immediate environments, and in my 40 years of professional life (which I have now laid down for one in which, for my declining years, I can have pleasure and a little pin money as I descend the western hillside), I always carefully observed the small details of my manipulations and their results, thus enabling me to improve upon my methods in the future if found necessary.

Bee-culture fascinated me 30 years or more ago, and for more or less of that time I have kept a few colonies in my yard for pleasure and recreation from office duties. Now that I have quit the office, rather than lay myself upon the shelf and rust out, I have entered the list of apiculturists, and as such I find that the field is open for closer observations than I had conceived; and being comparatively a novice, I have found that the bee-papers and other literature added to my *own* notes are of great value.

But a few things occurred in my yard during the season of 1907 that have somewhat unsettled my former convictions.

CONTROLLING SWARMING.

Previously I found it comparatively easy to control swarming by cutting out queen-cells and adding more room above. But during the past season, that method in my yard was a complete failure. Swarms would issue from the same hive every day for 3 or 4 days in succession, notwithstanding I would each time cut out every vestige of a queen-cell, return the swarm and see that they had room above. But it did no good; out they would come next day. I finally lifted the hive and put an empty shallow hive below furnished with foundation. This seemed to satisfy them, and settled the swarming question. With this latter arrangement I left them until they had drawn out the foundation in the shallow hive, when I exchanged places with the 2 hives, placing the shallow hive above, and under the super. Later on I confined the queen to the lower story and let them fill the shallow story with honey as fast as the brood hatched out. This effectually stopped all swarming from the start, and I was so well pleased with the success that I will not be slow another season in looking out for plenty of room for a prolific queen.

TEN-FRAME HIVE PREFERRED.

My hives are all the 8-frame style and

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I am now persuaded that inasmuch as I don't want so much increase, a 10-frame hive will suit my present ideas and location better. Formerly I was led to believe that the 8-frame hive was the ideal hive for section honey; that it afforded sufficient room for the queen, and the workers began business in the super sooner, and by the tiering-up system the colony was kept busy throughout the season, and with a fair flow a good harvest was the result.

REVERSIBLE BOTTOM-BOARD.

I have also observed that the reversible bottom-board used as its inventor intended is fraught with too much backache in lifting a heavy colony off so as to turn it upside down. Instead of that I use it with the wide entrance down to $\frac{3}{8}$ of an inch by taking a strip of board 2 inches wide and as long as the hive is wide (inside measurement) and drive a small nail in the edge at each end, leaving $\frac{3}{8}$ of an inch of the nail projecting, and adjust this to the entrance. This has the advantage of contracting the entrance for the winter without the labor of lifting the hive off and then on. It also adds more room below the frames for the accumulated cuttings and dead bees.

QUEEN'S DRONES AFFECTED BY MATING?

Pertaining to the question, "Are the queen's drones affected by her mating?" Turning back to my notes, I find that in July, 1904, I received from a reliable dealer a tested Italian queen of the red clover strain, and her workers for that season were well marked, and in every way were fine bees, but no drones that season. But the following season I had occasion frequently to open her hive, looking for queen-cells (as I was using her for my breeder), and I observed that while most of her drones were light colored and well marked, yet quite a few of them were dark leather colored, and some almost black, yet showing the Italian blood, and quite a few had red heads. The latter marking I had never before observed. At first I was inclined to doubt her purity, but her workers remained as at first—3 full-banded and bright. I carefully examined the rest of the colonies (all Italian) but found in none of them any such variety of markings, and there is not another yard within 10 miles of me, although there are some bees in the woods near. So I just let the incident pass for future thought if occasion called it up.

WORKER-BEE IN A QUEEN-CELL.

But in conclusion I wish to make note of one observation that has puzzled me quite a little. During the past season, in my rounds among the bees, whenever I found in my best colonies a ripe queen-cell, I cut it out and put it in the nursery, and when hatched I put the virgin elsewhere. On one occasion I had one that had remained 2 or 3 days over what I thought was its time, so I cut it open to see what the trouble was. Instead of a queen, I found a dead worker-bee fully matured, and in the same position that it would be had it crawled in to feed the larva—head towards the base of the cell. In every other respect the cell was empty. Now

the question that I would like to ask Dr. Miller, or any of the "old boys" is, How did that worker-bee come to be sealed up in that queen-cell? Do bees play pranks on each other as some of us old fellows did when we were boys the first time? Was that bee a mischievous rascal? and when caught in that cell by its comrades, did they hasten to seal it up? Is it a common occurrence that I have just stumbled upon?

Trout Lake, Wash.

Two Queens in One Hive

BY J. E. HAND.

It is evident from the nature of the argument that has been advanced in opposition to the plural queen system, that this system is not well understood by those who consider themselves sufficiently qualified to criticize it. Therefore it is the purpose of this article to explain a few of the conditions under which this system is not only possible, but profitable, as well as highly desirable.

In discussing matters pertaining to apiculture sufficient allowance should be made for the location and environments of the writer of an article. Viewing the two-queen system from the standpoint of the deep-frame hive, with its slow and tedious methods of frame-handling, it is doubtful if it could be made a complete success. However, it should require little argument to prove to the bee-keeper of average intelligence the many advantages offered by this system when used in connection with the improved sectional hive, with its rapid system of hive manipulation.

Bee-keeping as a pursuit is progressing, and bee-keepers are beginning to realize the necessity of employing short-cut, labor-saving methods. Twenty-five years ago rural electric lines, rural telephones and rural mail delivery, were unknown; today the face of the country is a network of electric and telephone lines, and every rural district has free mail delivery.

The bee-keeper of today, who advocates the slow-going methods of a quarter of a century ago is fast becoming a back number. As the horse-car has given way to electricity, so the old methods of handling, brushing, and interchanging of frames singly, must soon give place to the more modern methods of rapid manipulation by hives.

W. Z. Hutchinson, the veteran bee-keeper of Michigan, sounds the key-note to successful bee-keeping in three words, "Keep more bees."

Louis Scholl, the eminent Texas specialist, goes farther, and tells us that we can keep twice as many bees with a given amount of labor by employing rapid methods of hive-manipulation.

The exhortation to keep more bees is but a hollow mockery unless coupled with the advocacy of those methods that will enable us to do it.

To whom is the exhortation to keep more bees given if not to those bee-keepers who are wasting time in the useless handling, brushing and interchanging of frames singly? It makes no difference how many colonies you are now keeping, if you are handling frames singly you are wasting time that could be put to better use in keeping more bees.

The chief obstacle in the way of successful comb-honey production in the North has been the difficulty of getting all our colonies up to the desired strength in time for the harvest; this obstacle is entirely overcome by the use of the two-queen system, and every colony in the apiary is ready to begin work in the sections at the beginning of the honey-flow, which means a uniform yield per colony for the entire apiary, with no weak and unproductive colonies. Mr. Dadant's statement that the queen is of more value than anything else connected with the colony is literally true. Does not this prove that a plurality of queens increases the value of a colony? A queen may easily be worth ten dollars, and is not the bee-keeper making money who can rear such a queen at practically no expense save for a little time and a little talent?

It is evident that the opponents of the two-queen system are not up to modern methods of queen-rearing, or they would not attempt to magnify the difficulties and cost of rearing an extra queen for each hive. That there is no excellence without labor is as true of bee-keeping as it is of everything else.

Mr. Dadant discourses at considerable length upon the difficulties of rearing queens early enough in the season to produce workers in time for the harvest, and the echo is resounded in an editorial in the Review. It should be remembered that such queens are reared at the close of the harvest, and carried over winter in a single division of the sectional hive.

It has been found more profitable to run our bees upon the two-queen system of swarm control, and at the close of the harvest make our increase at a time when there is nothing for the bees to do, and every colony in the apiary can well spare one division of their hive with brood and bees for this purpose. The young queen is reared in the top division and begins to lay before it is removed. The old queen is not disturbed in the least, and there are still two divisions of the brood-chamber left.

In the spring the little colonies are again placed upon the others, with a queen-excluder and a wire-screen between; a flight-hole is provided for the little colony, and after the brood-nests are well established the wire-screen is removed, giving the bees free access to both queens. When we consider that these young queens are reared from our choicest breeders, it is easy to see the value of this system by way of improving our stock.

The claim that one queen will lay more eggs than a colony can care for amounts to but little in the face of the fact that if a weak colony is placed upon a strong one the combined heat of the two, with the additional force of nurses, will enable the weak colony to rear as much brood as the strong one.

Again, the two-queen system is a safe guarantee against the loss of a crop of honey, by having the colony thrown into an abnormal condition at the beginning of harvest by the failure of the queen, which would be fatal to comb-honey production.

The difficulties of introducing another queen at the risk of losing one of them are purely imaginary, since no introduction is necessary, and therefore no such

danger exists. It is evident that the rapid introduction of queens is but little understood by those who oppose this system, and who find it necessary to cage queens until they acquire the colony odor. When bee-keepers learn that odor has very little to do with successful introduction there will be less loss in introducing queens. It takes about one minute to introduce a queen to any colony, whether queenless or not.

A medium colony amounts to but little. If you want honey you must have the hive jammed full of bees, and the two-queen system gets them without fail.

If American bees would do as Professor Reepen describes in *Gleanings*, there would be little use for the two-queen system. He says, "If a strong colony stands next to a weak one during a heavy honey-flow, and succeeds in filling its own hive, it happens now and then that the strong colony will help to fill the hive of the weak one in a most peaceful way."

I've been wondering ever since I first read the article above quoted if those bees boarded themselves and went home at night; and if the Professor has any queens to sell of that particular strain! Birmingham, Ohio.

Improving the Honey-Bee

BY C. D. BENTON.

There is a difficult problem before every bee-keeper who undertakes to improve the honey-bee. Because many have failed to accomplish their purpose in this direction is no reason why we should quit trying. I am impressed more and more as we strive to lay any plan or basis to build upon, that obstacles in the line of ignorance are the only stumbling-blocks in our ways. I have come to the conclusion that when we speak of pure Italians, Carniolans, Caucasians or black, that the word "pure" is a misnomer. In my experience as a cattle-breeder, that not only must certain traits or types be followed up for a series of years, but a special selection of those traits or types. It would be useless for the breeder to accept every heifer or bull in his flock for improvement. He must make the selection that approaches the ideal on both sides.

We have a recognized standard of purity on poultry and cattle, but the poor honey-bee we guess at, and every one has his own standard.

The word strain seems to me far more fitting than purity. When we sum up the apiaries by scores, who among us can boast of the best strain, either in purity or for business? We find it mostly in the man and not the bee. A Jersey cow gives richer milk no matter who owns her, and hence more butter. But take the best strain of bees under neglect, and soon you have something else. Some will argue that they are pure still, if not allowed to mix with others.

Please examine a colony of drones from the best pure Italian queen procurable, and follow them in a series of years on the supersedure plan, then decide if you have the same drones. The best and purest cattle or chickens that are produced vary with every speci-

men. What can you expect if all breed together?

Now, can't we first discover that all these drones, like all the roosters or bulls, if allowed the freedom of the flock, you spoil your ideal, almost to obliteration? If you know the queen and the drone with equal knowledge, can't you start on an advance bee? But some will say you can not control or know your drones the same. When (if that be true), where, or when, are you going to make the improvement or advance? The queen only reproduces herself, therefore your advantage must come from the drone. It does not need thousands of drones to breed a few queens; the less drones one can have to secure the proper results the easier to control or make the advance, and to illustrate I will give a simple experiment carried on last summer:

Having 3 colonies for rearing-drones, the first step I took was to open the hives at the proper time and destroy all dwarf drones by pinching them on the frames; next time those showing the least golden color; the third time those that seemed least active by touching them and noticing their activity; the fourth and last time, Aug. 25. I had one hive in which the drones would commence to fly between 9 and 10 o'clock, while, the other hives did not have any flying drones before 1 o'clock. I killed all drones in the last two mentioned hives, and then opened up the hive containing the early-flying drones, all which I destroyed but about 100 sorted ones. I was rearing queen-cells in the same hive, and destroyed all but 9 of its best cells. They hatched in due time, about Sept. 1, and all 9 queens mated, which proved superior to any lot of cells mated through the past season.

I traced the improvement all through the season, and more noticeable the last lot mated. I also crossed the golden drones on some vicious hybrids, and perceived that the trait of gentleness was transmitted in a marked degree.

The prevalent idea is that drones fly a number of miles in mating queens. As I have always had an adverse opinion, I tried a simple experiment with one colony. My golden breeding queen is located close to one corner of the house, and was introduced into a 3-frame nucleus of ill-temper'd hybrids, and opening the hive to procure eggs made them so vicious that the children could not play anywhere around the house without being strung. So I devised the following plan:

Getting up early before the bees began to fly, I carried them to a woods about a mile away, and let them fly. At evening I went to the corner of the house and there were about a quart of bees which I destroyed with kerosene oil. I discovered only 2 drones in the lot; there were more than 300 carried to the woods that were all old flyers. Now it seems to me the homing instinct seems to be the limit of flying. (I use the word *Golden* instead of yellow).

I shall experiment more fully by using more colonies next season, as to the drones' homing instinct. I happened to notice 3 virgin queens on their wedding flight, and especially one that made 3 trips before being mated, and not over 10 minutes in all her flights.

We had a poor honey-flow here last summer, so we had to resort to feeding all the time to prevent losing drones. When we have reached the goal, that one can breed any trait or type with certainty, then we can talk of pure bees, of honey-gatherers, of non-swarmers, of gentle ones; also, and not least those bees immune to foul brood. Then we will smile with the Jersey milk maid as she fills the jars with beautiful Jersey butter.

Akin, N. Y.

Keeping Qualities of Honey-Vinegar

BY C. P. DADANT.

In my previous article, I have called attention to the possibility of a putrid fermentation taking place in honey-water as it does in rotting apples or grapes. Even if the vinegar has been made, it may have gone through only partial alcoholic and acetic fermentation, if improperly handled, and a part of its strength used up in putrid changes. Ropiness, which shows in honey-vinegar or wines, is only an evidence of unsound conditions. Your vinegar, if not well made, may be in the condition of cider made in part from rotten apples. This will destroy its keeping qualities, aside from injuring its flavor. The most important requisite of good wine, in order that it may improve with age, is that it should be made from absolutely sound and well-ripened grapes. Thus the keeping qualities of vinegar will depend very much on the material from which it is formed as well as from the manner in which it has been made.

Honey-vinegar made out of a liquid which contains decayed pollen, dead bees or limbs of dead bees as well as other foreign substances, is on a par with cider made of the refuse apples picked under the orchard trees, partly rotten or wormy, or with wine made from unsalable grapes, such as are picked by birds and decayed or riddled by the black-rot and which some inexperienced persons ingenuously describe as "wine-grapes." Nothing good can come from such refuse. I am strongly of the opinion that it is said that crab-apples make the best cider, because such apples are not culled before using. In the same way, good honey will prove to make better and more lasting vinegar than refuse.

In addition to possibly imperfect methods in the production of vinegar from honey or wines, there are diseases of vinegar which have been described at length by Pasteur, the great bacteriologist. The germ of acetification which changes the alcoholic liquid into vinegar is a fungus, the "*mycoderma aceti*" which may be noticed on the surface of a liquid undergoing acetic fermentation, in the shape of white floating "flowers." This germ continues to develop, even after the liquid is entirely sour, if it is continuously kept in contact with the air, and the vinegar loses its strength and becomes "flat."

On the other hand, there forms, in good vinegar, a microscopic worm, the vinegar-eel, "*anguillula aceti*." It is a snake-like worm, very active, and large

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enough to be detected with the naked eye, if the vinegar is placed in a very thin bottle or vial in a strong light. This eel is not to be found in vinegar made by the distillation of wood, or in any other of the unhealthy and dangerous substitutes sold for vinegar. So those of my lady readers who may shudder at the idea of swallowing alive a number of eels in salad will rest assured that it is better to use vinegar containing these live "fishes" than the other kind, unless perchance it has been prepared according to Pasteur's methods.

This anguillula is, by Pasteur, considered as another vinegar disease, because they absorb the oxygen and prevent the further acidification of vinegar.

The next disease is the formation of the "vinegar-mother," a gelatinous, viscous substance formed out of the vinegar, and which continues to grow as the vinegar gets older.

Yet in spite of all these diseases, good vinegar, well bunged after it is formed, may be kept for years. It is said that in certain countries, especially in the wine-producing regions, vinegar is kept good for half a century. It must be borne in mind that vinegar was originally made of sour wine only—"vin-aigre" shortened into "vinaigre." The vinegar made of honey has the advantage of being almost colorless, and of not retaining the peculiar flavor of apples or grapes which that made of these fruits plainly exhibits.

But how are we to prevent the existence of all these diseases? In the first place, as mentioned in a previous article, the vinegar must be properly made, by using the proper quantity of honey and permitting it to ferment thoroughly, changing first into alcohol, then into vinegar. After the vinegar is thoroughly made, Pasteur indicates a very simple method to prevent any further changes. It is the same as indicated by him to prevent the souring or decaying of wines—heat. Since all changes are due to the formation of different growths or living animalcules or plants, it is only necessary to kill those living germs whether vegetable or animal, to secure an unchangeable liquid, provided the air is excluded. This is a condition *sine qua non* of success, for the air is the vehicle in which all these germs are transported.

A temperature of 130 to 150 degrees is said to be sufficient to destroy all germs of vinegar disease. The vinegar thus treated may be allowed to settle, and after a few weeks draw off the lees, which is composed of the murdered eels and sterilized fungi. The vinegar will then assume a great limpidity and will keep for years.

In the heating of wines and vinegar, "pasteurizing" is done in closed vessels, especially with wines from which the alcohol would first evaporate, being more volatile than water. In vinegar the heat in closed vessels is less necessary, because acetic acid does not evaporate as readily as water. But more or less of it and of the essential oils will evaporate, which will be readily noticed by the pungent odor escaping from heated vinegar. For that reason it is advisable to keep the vessels closed as much as possible, and to apply heat only long enough to warm the mass thoroughly at the temperature indicated.

If the vinegar is too weak and needs concentrating, it is better to use cold than heat. If it is exposed to a temperature below 32 and above 20 degrees, some of the water will congeal and will show itself in the shape of small crystals, which may be removed by filtering through a cloth. The acid portion of the vinegar is thus rid of a portion of its water. The acid itself would congeal, it is said, if a temperature as low as 14 degrees should be reached.

Iron-bound barrels are not desirable for vinegar unless they are made of very strong and sound staves. The least

leak which will permit the vinegar to escape will cause the hoops to rust, for its action is as damaging to iron as that of salt. A good article of vinegar which it is intended to keep had best be bottled, to keep pernicious influences away.

Good, well-made honey-vinegar should not be sold at a low price. Each family uses but a very limited amount of vinegar each year, and well-to-do people willingly pay from 30 to 50 cents per gallon when they know that they are getting a good, clean and healthy article, free from deleterious substances.

Hamilton, Ill.



Report of Michigan Convention.

Pres. W. Z. Hutchinson, opened the convention in the City Hall, Saginaw, promptly at 8 p. m., Dec. 18, 1907.

The attendance was not large, but a considerable number were added during the second day.

Pres. Hutchinson spoke of the expectation that the National Bee-Keepers' Association would meet in Detroit for its next convention. Detroit had given way last year for Harrisburg, Pa., and he said, as also had Pres. Geo. E. Hilton, that the convention would be sure to be held at Detroit. Upon resolution it was decided to hold the next State Convention in connection with the National. A very hopeful tone was manifested, and if the expectation of those who should be in a position to know, is realized, there ought to be the largest turnout at Detroit the National has had for many years.

EXPERIMENTS IN BEE-KEEPING.

R. F. Holtermann, of Brantford, Ontario, in his address on "Co-operative Experiments in Bee-Keeping," pointed to the growth of co-operation in the Ontario Agricultural and Experimental Union of Ontario, which now had over 7,000 experimenters. It had attracted the attention of the leading spirits in progressive agriculture in the United States and Europe, and similar organizations were being formed in those countries. Bee-keepers required something to unite them in interests, and to teach them to observe and come to proper conclusions as to cause and effect. Messrs. L. A. Aspinwall, R. L. Taylor, Geo. E. Hilton, E. E. Coveyou, and others, favored immediate action, and upon the suggestion of Mr. Taylor, it was decided to conduct the following experiment during the following season, with Elmore M. Hunt, Redford, Mich., as chairman of the committee, and all wishing to co-operate in this work should write to him.

A test is to be made as to the effect

of a double instead of a single bee-space between the last row of sections and the side of the hive, and to raise the front of the hive $\frac{3}{8}$ of an inch from the bottom-board, the brood-chamber closing the opening thus made. It had been stated in the convention that such action would cause the sections next the side of the hive to be filled and capped as soon as the central ones. More bees were thrown between the section and hive, and a larger proportion would go up the side of the hive and enter the super from the side, as they could not so readily reach the bottom of the central combs. In response to a question, Mr. Aspinwall, known to be a very careful and thorough investigator, said he discovered that the old bees were not found in the sections, and that more bees with old, frayed wings were found as one examined the cluster towards the bottom of the hive. The field-bees no doubt gave the nectar to the younger bees, and occasionally one can see bees with their mandibles open and another bee receiving, so there was clearly a transfer taking place. When the brood-chamber was crowded, where was the honey put except in the supers? and there only young bees were found.

EXTRACTING HONEY.

Mr. Coveyou pointed out the importance of experiments in the extraction of honey, such as the best speed at which a honey-extractor should run. The work in this direction was haphazard. Bee-keepers should find out the best method of extracting, and the best machine, and then demand it from the supply-dealer. The best temperature at which to extract should be discovered, the success of the work being gauged by the revolutions and the weight of honey left in the comb when through. Mr. Coveyou used the Holtermann strainer in his extractor, and he wanted a test made of the best temperature at which to strain. Mr. Coveyou, instead of using a blue-flame oil-stove under the extractor bottom when the honey was too cold and thick to strain rapidly, as

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Mr. Holtermann uses, had a double-bottom in the extractor with water between. In this way the unstrained honey at the bottom of the can became heated and strained.

The advantage of a strainer cone-shaped (with the top of the cone cut), and allowing the unstrained honey to rest on the bottom of the can, was that more rapid work could be done, the material strained out settling largely on the bottom of the can, and left the cloth on the side of the cone clean. This refuse could be collected by a paddle with a straight end, and pushed out of the extractor through a hole generally covered with a screw-cap. Mr. Coveyou stated that he never removed the cloth from the cone. He could thoroughly clean it by means of water, neither hot nor cold, and brushing it by means of a whisk.

COMB-HONEY SUPERS, HONEY-GATES, ETC.

The question as to points desirable in the best comb-honey supers brought out a suggestion by E. D. Townsend, to have one drawn comb at each side of the super. This brought the bees up and tended to uniformity in finish.

Mr. Aspinwall pointed out that continuity of passages between brood-combs and sections was essential for passage ways for the bees to take up honey, also for the best ventilation. In constructing his non-swarming hive he made this a feature.

F. J. Miller, President of the Ontario Bee-Keepers' Association, London, Ont., also Mr. Coveyou, advocated in their management for out-apiaries run for extracted honey, hauling home the combs of honey and then extracting, using a power engine. Mr. Coveyou, backed by others, mentioned the undesirable features in honey extractor gates as made at present. They would not stay where wanted, and, when opened entirely, fell entirely over and deflected the stream of honey.

Mr. Aspinwall exhibited a queen-catcher. He had not caught a queen with his hands for 5 years. It consisted of a 14-gauge wire, beat at one end into a circle $\frac{3}{4}$ of an inch in diameter inside the wire. This wire was dipped into melted wax and held about the queen on the comb when she would step on the wire and could be lifted by it.

T. F. Bingham thought bee-keepers' conventions were not run right. There was too much for specialists; it should be for the plain, small bee-keeper, and there should be full reports in the bee-papers.

Mr. Bingham's remarks were not considered quite correct. Very little transpired which could not be heard with profit by the small bee-keeper, and bee-papers could not reprint from year to year acceptably to their readers long reports of the nature that Mr. Bingham advocated.

Elmore M. Hunt, who has been working very hard to make the Michigan State Association the banner bee-keepers' association in the Union, and who feels confident that Michigan has enough bee-keepers to make it such, attributed the small membership to unawakened interest. It was decided to issue, as was done last year, the "Year Book," giving the name of each member, his

postoffice address, number of colonies, amount of comb and extracted honey and beeswax for sale, number of colonies the member wants to purchase or sell, etc. Such a book distributed had been valuable in the past, and would be particularly valuable in a season where the honey crop would be larger.

Mr. Aspinwall gave a new method he had adopted of introducing queens. Late in the fall he made colonies queenless, early in the morning when the colony was lightly clustered he had opened up the center of the cluster and dropped the queen down between the combs. He preferred introducing queens late, say October, and did not want to do so during the honey season.

Mr. E. D. Townsend gave the following practical address on Clarifying Beeswax:

Clarifying Beeswax.

It was about 25 years ago, that a patron brought in some beeswax that was the finest I had ever seen at that time. Since, I have seen some on exhibition that was clarified equal to this sample, or perhaps better. You may be sure I pumped this individual for all I was worth, until I knew, in theory, all about rendering beeswax. This especial lot of wax was in cakes the size, and shape of a brick; and about the first question I asked was, "How did you get it out of the tins, as there is no slope to the sides of the cakes?" His reply was something as follows:

This wax was not caked in tins at all, but instead, five basswood boards, $\frac{3}{8}$ -inch thick, cut in the following sizes, were used. The base, or bottom of the box, was cut about 8x10 inches, two end-pieces 2x4 inches, (these should be cut very accurately,) two side-pieces 2x10 inches. This completes the box, only you will need a stop nailed on each side of the base; then a wedge, to wedge up the box solid. Set the box up so that the inside dimensions are 4x8 inches, and two inches deep. The material must be planed, and the joints made very smooth.

Now were we to fill this box with wax as it is, the wax would stick, and be hard to get out, even with this knock-down box. To prevent this, soak the box in water for 2 or 3 hours before using, and the wax will come out smooth and nice.

Handled as I am about to describe, there will be no cracking of the cakes in cooling. The process of clarifying is as follows: The wax is melted in a common No. 9 wash-boiler first putting in a pail of water; then filling the boiler with the wax to be clarified, until the wax is within 2 inches of the top of the boiler, when melted.

A tub the size of the boiler, or a little larger, is placed under the wax-press; and the whole contents of the boiler is put through the press. As many tubs are used as we have meltings of wax, or, rather, the number of meltings we put through in one day. The next morning the wax is cool in the tubs, and is removed, and all the dirt rinsed off the wax that we can conveniently, and the wax stored away until all the wax has been rendered, and treated this way.

Now we are ready to clarify the wax. Procure a large wooden box, the large-

er the better (although you may be able to get along with a moderate-sized one). This is to chop the wax up into small pieces in. Now put 2 pails of clean water into the boiler and fill up with wax, to be clarified. When melted, set in the warmest place you have, but not on the back of the stove, or where there is any fire, for this would keep the sediment stirred up—the very thing you must avoid; now wrap the boiler of melted wax in blankets, to keep warm, for it must be kept in the liquid form for about 6 hours, to be sure of the sediment being all precipitated.

At the end of this time there will be a black scum on top of the wax, which must be removed; then you are ready to cake the wax. For commercial purposes, we cake in 10-quart tin pails, being sure that they are perfectly clean before using. Do not make the common mistake of putting water in the pail before filling with wax; if you do, the cake will be rough on the bottom, and will not appear well.

Procure a quart tin dipper; and as soon as the wax is skimmed proceed to dipping it into pails, to cake for market.

There is a little knack in dipping, so as not to roil the liquid. Let the bottom of the dipper go down into the wax first. That is not quite the idea, either; it is more like this: Dip the dipper into the wax as if you were going to dip out a dipper full, but do not let the lip, or rather the top of the dipper, sink into the wax more than a half, or three-fourths of an inch, then carefully let the bottom of the dipper sink down, until you have a full dipper; then lift the dipper out carefully, so as not to roil the liquid; as I mentioned above.

You can usually dip 3 cakes from each melting, before the sediment begins to show. That part of the wax that is left in the boiler is removed when cool, and the bottom of the cake washed in clean water, and is then ready to be melted with the next melting.

Only one lot is melted a day. This gives plenty of time for the sediment to fall to the bottom of the melted wax, and for the cakes to cool.

Handled this way, the wax is so cool that the cakes do not crack in cooling.

I shipped between 300 and 400 pounds of beeswax clarified this way, last winter. This is what the buyer said about it:

"This is one of the very finest lots of beeswax that we have ever received, and we compliment you on the neatness and skill in which it was rendered, and packed."

E. D. TOWNSEND.

LOSSES OF BEES IN WINTER.

W. J. Manley, of Sandusky, gave a profitable and entertaining address on the subject of "Winter Losses." Mr. Manley thought he should be able to speak with authority on the subject. Last winter he had lost all but one colony out of 125. During the winter of 1903 and 1904 he had lost all out of 225, and yet he made money out of bees by buying again in the spring and carefully rendering the old comb. He

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endorsed what Mr. Holterman had said the previous evening, that some beekeepers were so situated that they could make money rearing bees and selling them, but not producing honey; others could do better not to allow their bees to swarm, and buying increase if wanted. He attributed his and his neighbors' winter losses to aster honey gathered late in the fall. During the winter of 1903-4 he had rendered enough wax out of old comb in the neighborhood to make over \$900 worth of beeswax.

He did not believe in specializing; by engaging in other occupations, he did not have to charge all his time to the bees. During the past season from 65 colonies he had now 91 colonies in winter quarters, and sold over \$500 worth of honey. Mr. Manley made a very happy speech.

The addresses and discussions brought out many valuable features which, it was felt, only those who attended the convention could appreciate. The individual talks between conventions where each one could take up what questions specially interested him, and got his information from what he considered the most reliable source, was worth much to those present.

Pres. Hutchinson refused to stand for the presidency again. The election of officers resulted as follows: President, L. A. Aspinwall; Vice-President, E. D. Townsend; Secretary-Treasurer, E. M. Hunt, of Redford, Mich.

Mr. Aspinwall, in his address on "A Year's Experiments," stated that it had been a hard year for him to conduct experiments. The season was bad, and he had rheumatism, and could not put supers on his non-swarming hive when he should. However, only one colony swarmed out of 31, and this when they were so badly crowded that they built brace and bur combs in every direction. He had reduced the slots in the slotted separators to 1/4-inch thickness, giving the bees great standing room between the combs. He found a hive the nearest square the most normal; this with added comb-honey supers gave a cube. He was providing strips between the ends of the frames so as to make them close-end frames in winter. He found the bees wintered better in this way.

Report of the Chicago-Northwestern Bee-Keepers' Convention.

(Continued from page 116.)

COLOR OF HONEY.

Dr. Miller—Dr. Bohrer says that heartsease honey is dark. I have always supposed that to be the case. A few years ago I had some extra white honey rather late in the season. I had no idea what it was. I didn't know for years afterward. I don't know whether I know now. But last year and this year I have had some very light honey. I have serious doubts whether I had anything from white clover. But after the time for white clover I got some white honey, and a good deal of it. I don't know what it could be unless heartsease, for the bees were working very busily on heartsease. Has anybody else had light honey from heartsease?

It is decidedly whiter than white clover.

Pres. York.—How many had light honey from heartsease?

Mr. Wheeler—Not this year.

Dr. Miller—Is it sometimes light and sometimes dark?

Mr. Wheeler—I believe that quite a lot of that honey was white clover honey.

Dr. Miller—I don't think so.

Mr. Wheeler—In some seasons they work on both white clover and heartsease.

Mr. Baldrige—I live in the same locality as Dr. Miller. When *he* got light honey, *we* didn't. We had immense quantities of asters, and if we had had good weather, we would have had a great deal of light honey from asters. The woods were filled with asters.

Dr. Miller—We have plenty of asters, but the bees did not work on asters or goldenrod.

Mr. Dadant—I don't care if everybody here said that heartsease honey was dark. I have my own eyes. I have had 25 barrels of heartsease honey, and it was not as white as clover. It was a sort of pinkish yellow—very much lighter than all other fall honey. Heartsease doesn't blossom at the same time as asters. The petals remain, but the seed is ripe. It still looks like a bloom. Heartsease blooms from the beginning of August until the asters come. Aster honey is just as white as white clover. We had 4 or 5 barrels of aster honey. I said to the men at the end of the season, "We have made a big crop, but the end is here. I don't think we will get anything out of asters." But we had a great deal of honey, and it could not come from anything else than asters. Heartsease honey is not dark, and is the nicest selling honey that you can find. It is not dark nor is it a bright yellow.

Mr. Baldrige—In my locality we have no heartsease to mention. The honey I had at the time asters were in bloom was very white. I believe it was gathered from asters.

Dr. Miller—Another reason that makes me think it was heartsease honey, besides the fact that we didn't see the bees working on asters, was the fact that the pollen carried in was exactly like the pollen that I saw them gather from heartsease. Mr. Dadant says that heartsease honey is light. Others say it is dark. He is so positive about it. (I don't want to put any more confidence in him than he deserves!) His honey is lighter than that of others. If there can be that much difference in heartsease, I believe that my honey can be lighter than Mr. Dadant's. There was so much difference in time between the bloom of clover and heartsease. The pollen was exactly like heartsease.

Mr. Dadant—There are some 20 different kinds of heartsease. Is it not possible that some kinds yield darker honey than others? Probably the kind that Dr. Miller has is different from what we have in Central Illinois, and they can be still different from those in Kansas. This explains the difference.

Dr. Miller—Until within a year or two heartsease has been very scarce. Prac-

tically none. This year a great deal of it was to be seen.

Mr. Taylor—What is the color of basswood honey?

Mr. Wilcox—Nearest white of any honey that we produce in Wisconsin. It is nearer a milk white. I produced heartsease for a good many years. I never yet produced any that was light-colored. This evening is the first time I ever heard or read of it. We have a plant that blooms on old worn-out fields. It is a species of the horse-mint. You will know when the bees are working on it. Their backs are covered with a silver-gray dust. That honey is very light, almost white. It grows at the same time heartsease does, just before the basswood, or at the commencement of the basswood flow. The bees might have been getting that when you thought they were getting a clear crop of heartsease. Otherwise, I should say that heartsease honey is dark, but has a lighter color than basswood.

Pres. York—Does soil have an influence on the color of honey? I understand that the color of alfalfa honey is different in Arizona and Utah than in New Mexico. I understand that soil is responsible. How many agree that basswood honey is lighter than clover honey. 5. How many do not agree? About the same number.

Mr. Taylor—Why couldn't it be just so with heartsease honey? Take the clovers—every different kind of clover produces a different kind of honey. If different clovers vary, why not different varieties of heartsease?

Mr. Wilcox—I like that. There are two species of basswood in my locality. The two kinds of wood don't put out leaves in the spring at the same time. There is a difference of about 2 weeks in the time.

PURE FOOD LAWS AND HONEY DEMAND.

"Have the pure food laws enacted by Congress and the different States caused a greater demand for honey?"

Mr. Taylor—No.

Mr. Wilcox—Yes. I have always been a strong advocate of the pure food law. I am very pleased with it. We have what we asked for, and should be glad. The pure food law enables the customer to have some confidence that the thing he buys is what he calls for. I cannot buy enough honey to supply my customers. I am getting more orders, and am confident that some of it comes from the confidence in the goods.

Mr. Taylor—I think we are fooling ourselves. I have always thought so. I don't think that the pure food law has the least effect here in Chicago. It doesn't apply to honey here in Chicago. It applies only to interstate commerce. A man can make all the adulterated honey he wants to, and sell it in Chicago. If the State law is enforced you will get less of it. If you don't enforce the law you will get the same as before. It is foolish to attribute the increase in the demand for honey to the pure food law. It is due to the fact you haven't got honey. People want it when you haven't got it. That accounts for all the advance we have so far.

Mr. Arnd—The pure food law has driven a number of concerns in Chicago out of the honey-business. A great

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many wholesale grocery houses are now putting up their own honey. They buy honey and put it up themselves. A number of so-called honey-dealers have gone out of business here in Chicago.

Mr. Taylor—You have enough left to supply Chicago. In my State I have traveled a little this fall. One day I came across a horse hitched to a covered rig, and as we stopped at the place I inquired of the driver what he had, and he said he had medicines and bottles of all kinds and no labels. I asked him where they came from. I learned that instead of shipping them from where they were originally made, they were transferred to Saginaw county. They can ship from there to another place. Honey-dealers left Chicago and have gone to Indiana, and are continuing.

Dr. Miller—Will you tell us what drove out those few that have gone.

Mr. Taylor—You have enough left to supply Chicago.

Mr. Arnd—It isn't likely that a large grocery house would have a house in every State in the Union.

Mr. Dadant—Here are facts. We have been dealers of honey for 40 years or more. We never thought that we could sell honey to small grocers. We never tried to. Four years ago I got acquainted with a grocer in Keokuk. He handled Chicago honey. He said to me, "You sell your honey at 10 or 12 cents a pound in small packages. We can buy honey in Chicago so it can be handled for 10 cents a pound. We like to handle pure goods, but must meet the price." I met him again last fall. He then said, "We are compelled to use pure goods, and I am glad of it. We will have to use pure honey." I asked him if he could handle our honey now. He took \$600 worth of honey that season. And he is still handling our honey. He used to handle manufactured honey. Such is sometimes labeled "Artificial Honey." The pure food law has helped already, and it is going to help. The pure food law went into effect January 1, 1907, but no one was prosecuted until October.

Mr. Taylor—The pure food law did not affect that.

Dr. Miller—The pure food law went into effect last January. There is a prohibition law passed down in Alabama. It doesn't go into effect until January, 1909. But it affects the liquor business. It has its effect before the law really takes effect. These are facts that have an indirect bearing. Where I live, it was common to see impure goods year after year—syrups, jellies, and all that sort of thing. I never saw on the labels anything that said anything was wrong with them. Now I see largely a corn syrup. On another can that formerly was sold as honey-drips, now has such a percent of corn-syrup. You won't find a can or jar that doesn't say pretty plainly on it just what it is. If those fellows have gone to some other place, they don't send their goods to Marengo.

Mr. Wheeler—I see about as many grocery stores as any one here. Lots of these wholesale houses are labeling their articles a certain brand. They have "So-and-so's" brand of honey. They

don't call it "pure honey." The store-keeper can retail the stuff for 20 cents per pound fruit-jar. They have it in jars from one pound down. They have a way of dodging the law so that you people don't think of it. People don't look for the word "Pure." They see the word "Honey" on it, and buy it. There is a lot of this kind of goods put on the market that I don't consider pure, and a great deal sold, especially in the poorer districts. Every store has some sort of honey in it. It is sold under different brands, just as the "Old Manse" brand of maple-syrup. The dealers claim that if they use the word "brand," it simply means the same article as has been put up for years before. It is the same article under the same name. I think you would be surprised at the amount of honey in the stores today.

Dr. Miller—What is there in the price to make him think that it is not pure honey? What are the prices?

Mr. Wheeler—In the size of packages. A pound and a half of honey can not retail at 20 cents.

Dr. Miller—Can pure honey be offered at 20 cents for 1½ pounds?

Mr. Taylor—Perhaps there is one way in which the pure food law will do good. If the people become convinced that the law is carried into effect, and that goods are all properly labeled, what will be the result? Not that they will eschew all syrups and jellies, but if they like them they will buy them, still resting upon the law that they are getting just what the law calls for. Many people like these syrups. Chemists tell us they are just as good as honey for eating. Under such circumstances they will buy it just as largely—maybe more largely than before.

Dr. Miller—Do you think that what was called the "Wiley lie" hurt the sale of honey any? No? Then he is in a class by himself.

Mr. Taylor—The cry made by the bee-keepers affected the sale of honey. If they had made no fuss there would have been no trouble.

Mr. Moore—This discussion strikes very close to me. I have an experience of over 20 years, confining myself to family trade. I have been in touch with wholesale trade, and have a pretty general view of the situation. To use the word "honey" on the package in question, if it is not all honey, is illegal. "Pure" is not necessary. Pure goods don't have to be labeled at all. "Honey" means "Pure Honey," only, and always. Is it possible to sell a pound jar at 20 cents? California honey can be sold for 11 cents. So 9 cents would be plenty of profit. It is not necessarily impure because it is sold at 20 cents. In regard to the pure food law. I am much interested in the law. Away back of January 1, there was an effect on commerce in Chicago, even before the grocers were talking pure food law. People began to label their goods truthfully. The public has a wholesome respect for Uncle Sam. As soon as Uncle Sam took an interest in the pure food business, people began to "sit up and take notice." As far as I know there hasn't been an effort in the United States to enforce the law. It has been a

self-enforcing law. Because of respect for Uncle Sam it has an effect, a very natural effect. My honey is always pure. People buy it with a freedom never known before. They have confidence that Uncle Sam will punish a man who sells impure honey. Lack of confidence is a natural thing. The confidence that people have in Uncle Sam helps every one to sell honey, whether this advertising is making people more skeptical or more careful as to whom they buy honey from. As to the Wiley lie, I have fought against it for years. I have sold mostly extracted honey. I have very often been asked, "Did you make it yourself?" People believe that honey is manufactured. Wiley started it, and the reporters have helped it along for the sake of sensation. It is no use for people to say that the Wiley lie has not hurt bee-keepers. Hundreds, I believe, had quit buying honey until they got acquainted with me. Then they bought it because they believed in me. The Wiley lie stopped people from buying honey because they believed it was made by somebody, and not by bees.

Mr. Taylor—I have sold a good many tons of honey, and never said anything about the Wiley lie to any purchaser. Neither has anybody asked me if I made that honey myself. He has been crying and shedding blood and tears over the Wiley lie. Of course, people will ask him. You say, from what we have heard, that these grocers are full of false honey. Call it what you will, it is evidently not pure honey, whether it is correctly labeled or not. Who knows whether the Government has punished any one?

Dr. Bohrer—I am much interested in the Pure Food Law. If you have a defective State law, revise it and make it an effective one. I am much interested in the production and sale of extracted honey. I think that is the best shape for it, the most healthful. Some say there is an article being sold in Chicago that is not honey. If such is the case your Legislature is not treating you right. Revise the law. In Kansas no one dares sell anything under a false label. If he puts the word "honey" on it, and it is not pure honey, that man is handled, and not with gloves. However, under the National Pure Food Law, you do not dare ship honey from one State to another unless it is pure, without danger. People who see the label "Honey" on a jar say that it is "honey." The pure food law does not allow it to be sold under a false label, so now people do not question it at all. Merchants dare not handle anything but what is pure. If you want to produce more honey and with less labor, begin to produce extracted honey. You will all find it to be an advantage.

Mr. Wheeler—Dealers use a certain mark that is permissible by law. The word "brand" is used a good deal. The goods are sold so cheap.

Dr. Bohrer—Are you sure it is not pure honey?

Mr. Wheeler—Pure honey is much higher in price than it was a year ago.

Mr. Moore—The National Bee-keepers' Association put \$200 in my hands to help clean up the Chicago honey market, and I claim that there is no man better able to give an intelligent opinion. Truth

should be published. Owing to this fact, that I was retained by the National Bee-Keepers' Association to clean up the Chicago market and stop the fraudulent sale of honey, I have been in close touch with this market. Shortly after the time that I speak of, the Illinois Pure Food Commission went into business. Then we began to make a collection of samples. We found at that time between 20 and 30 different kinds of bogus honey on the

market. We arrested one man. He was discharged by the Justice because he swore he didn't know it was impure. Since the organization of the National Pure Food Commission the conditions have been better. For the last 5 years the Chicago market has been practically bare of anything but pure honey. Those facts should go forth to the public.

(Continued next month)

Editorial Notes and Comments

(Continued from page 135.)

Mr. Titoff—Russian Apiarian Expert

Abraham E. Titoff, a young Russian, came to the United States about 5 years ago to learn bee-keeping. He worked for some time with the A. I. Root Co., and later went to California, where he reared queens. Recently he passed through Chicago on his way back to Russia, where his title will be, "Expert in Apiculture, in the Russian Department of Agriculture, in Charge of Apiculture, in Province of Kieff."

Mr. Titoff has learned to speak the English language quite fluently during his 5 years' residence in America, and returns to his far-away Russian home imbued with the spirit of progressive apiculture that abounds in the United States. We wish him every success, and hope that in the years to come the old American Bee Journal may frequently be favored with something from his pen about apiarian conditions and prospects in Russia.

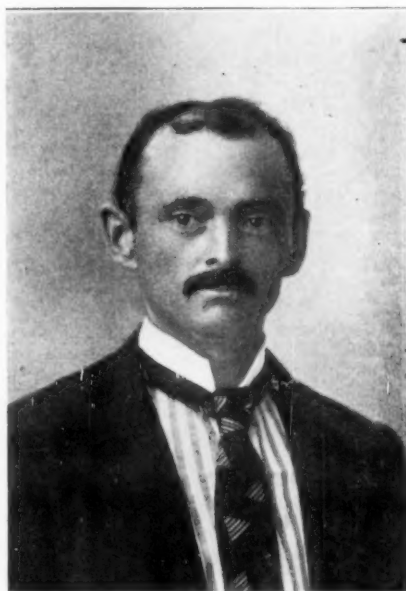
Please Patronize Our Advertisers

There are very few papers that could be published very long were it not for the advertising patronage extended to them. And in order that such advertising may be continued, it is necessary that it be made profitable to those who order it and pay for it. In view of this we wish to urge our readers to patronize the advertisers in the American Bee Journal. This will encourage them to continue their advertisements, and thus help the publishers to get out a good paper. Any one who has had experience knows that a bee-paper is no bonanza, and that there are many other lines of business that are much more profitable. But publishing a bee-paper is a clean, honorable business, and we have enjoyed the work immensely for more than a score of years, even if we have not grown rich at it. We feel, however, that we have been permitted to do some good by helping bee-keepers in their work with bees. So in return, besides a prompt payment of subscriptions, we simply ask that our advertisers be patronized liberally, not forgetting always to mention the American Bee Journal when writing to them, all of whom we believe to be thoroughly reliable.

"Southern Bee Culture"

This is the title of a new work of some 140 pages intended to be adapted especially to bee-keeping in the Southern States. Its author is the Georgian bee-

keeper, J. J. Wilder, and while the general principles of bee-keeping are the same North or South, it will seem more



J. J. WILDER.

natural to a Southerner to read of swarming in April than in July. Some 20 pages are occupied with illustrations

of hives, bee-keepers' implements, etc. In the last 40 pages are found articles regarding bee-keeping conditions in the different Southern States, each written by a resident of the State of which he writes.

The pamphlet is in paper covers, well printed on good paper, and it is to be regretted that lack of care allowed some blunders in writing, as where it is said, page 9, that a worker becomes a field-bee when 8 or 10 days old; or on page 6, where the royal larva is said to be fed 6 days, when "the queen enters her larval state in the cell, and continues thus for about 10 days."

The author favors Italian bees, and of the two kinds of black bees found in the South prefers those with "a brownish waist, and short, dubby abdomen." The other variety is black, and has a longer and smaller abdomen, seeming to be a wild race, "very spiteful, and furious stingers."

The price of the book is 50 cents, postpaid; or with the American Bee Journal for one year—both for 90 cents. Send your orders to 118 W. Jackson, Chicago, Ill.

Tennessee State Association

At the close of the Course in Apiculture given at the University of Tennessee, at Knoxville, recently, a State Bee-Keepers' Association was formed. The following officers were elected: President, Prof. G. M. Bentley, State Entomologist and Plant Pathologist, Knoxville, Tenn.; Vice-President, Henry Cook, Springfield, Tenn.; and Secretary and Treasurer, John M. Davis, of Spring Hill. Much enthusiasm was demonstrated in the organization of this association, the list of membership has increased rapidly, and additional names are being received daily. The annual meeting is to be held conjointly with the State Horticulturists and Nurserymen in Nashville during the last week in January, 1909.

Apiarian Pictures

We would be glad to have those who can do so, send us pictures of bee-yards, or of anything else that would be of interest along the bee-keeping line.



By W. A. PRYAL, Alden Station, Oakland, Calif.

A Year of Flowers.

Such a wealth of blossoms I hardly remember ever seeing before. No matter where I go over hill and dale, the earth seems carpeted with beautiful flowers. Fruit-trees are a mass o' bloom—the cherry tree seems to have the most blossoms, and it is immaculate in its

snowy whiteness. Why, "the old apple-tree" is not "in it" with our beautiful cherries. And "the hum of the bees in the apple-tree bloom" is a far echo to the roar of our bees when they sail into the petals of our cherry-bloom. The coming of the white squadron or fleet to San Francisco will not create a greater

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commotion than the bees make amid the blossoms of a large cherry tree.

In company with a few friends I took a walk into the Contra Costa mountains near here lately, and I noted acres and acres of California dewberries in bloom. I never imagined these plants looked so pretty when in blossom. And how the bees sported amid the flowers! They made more merry over the feast they were enjoying than a lot of children at play on a summer's day. I noticed that plant-growth on the east and north sides of the hills and mountains was putting forth a mass of nectar-secreting flowers. Now let warm nights come in May and June and the honey-combs will bulge lusciously white with honey fit for the most delicate palate. But withal nature now seems to have provided a rich floral garment, the days yet to come may take the color and "starch" out of it, so that it will be neither a thing of beauty nor a joy to the bee-man's heart.

Agave Americana It Is.

In the February number I stated that a question was raised as to the correctness of the botanical name of our Century Plant. The "jury" I mentioned that had the name of the plant under consideration reports that the name as we have so long known it by is the correct one—so *Agave Americana* it is, and so it will remain.

Foul Brood Not Here.

A young gentleman who had kept bees in New York State, came to see me recently and said he would go into the bee-business in the northern portion of the State if he were sure his apiary would not be ruined by foul brood. He was astonished to learn that this dread disease is unknown in this part of California; at least, it has never secured a foothold here. It never got into my apiary, and during the long period I have had to do with bees I never saw a case of the malady—and I hope I never shall.

A "Slumgumming" Invention.

Flashed upon the Pacific from our far-away Honolulu the startling and important news comes to us at the close of March that a couple of bee-keepers (the cablegram didn't state whether or no they were Kanakas) have invented a process to obtain wax from slum-gum. What the process is the newsman sayeth not. And the average newspaper reader I am sure knoweth not what the dignified word "slumgum" means; possibly, it may be taken from the garbage raked from the slums by the Salvation Army. But be that as it may, the bee-cultural world awaits with some interest more light on the new way to make slum-gum give up the wax it so persistently retains within its grasp, much to the exasperation and loss of the bee-keeper.

Cheap Hawaiian Honey.

Not long since I had occasion to visit one of the large baking establishments in San Francisco, and while there I learned that they use large quantities of honey—a dark sort they get from the Hawaiian Islands. This honey is far worse than the worst produced in California, but to

the manufacturing baker it has two things that commend it to his consideration; it is darker, and, better, to him; it is dirt cheap—corresponding, of course, to its turbid color. I was told this honey is purchased at the astonishing low price of 3 cents a pound. I said "low price," but really that is high for the rank article.

This is another case, to my way of thinking, where the American producer "gets it in the neck" by our country's

mad rush after insular possessions. It lets down the protective barriers when the Trust is benefited. In this case it is the Biscuit Trust, so-called, that secures cheap "foreign" honey when otherwise it would have been obliged to have a better grade of the home product at a somewhat higher price. But I must not write, I suppose, on such economical subjects—it may not suit the tariff defenders and the—well, I have said enough.



Send Questions either to the office of the American Bee Journal, or to
DR. C. C. MILLER, Marengo, Ill.
Dr. Miller does not answer Questions by mail.

Improving Bees Under Natural Swarming.

Replying to E. H. Upson, page 122, while it is very true that one can improve his stock while allowing natural swarming, and while it may for some be the most convenient way, it is certainly better, for one who wishes to avoid swarming, to avoid cells from swarming stock. Because there can be little doubt that swarming is to some extent an inherited trait. It will be noted that on page 55 colonies are not selected because swarmers, but because superior in other respects. Even if the plan given on page 55 be used, a colony not given to swarming is to be preferred. It can be forced into swarming by having brood given to it from other colonies. C. C. MILLER.

Best Comb Honey Hive—Dudley Tube—Other Questions.

1. What is the best kind of hive for comb honey?
2. What is a Dudley tube? What is it used for, and how is it used? Where can I get one?
3. Do you like the Danzenbaker hive for comb honey?
4. Why do people advise not to feed bees in the spring?
5. I have no small trees in my apiary, and I don't wish to climb tall trees after swarms, or clip the queen's wing. Will an Alley trap prevent loss of swarms? If so, how?

NEW YORK.

ANSWERS.—1. Bee-keepers are not agreed upon that question. For my own use I like the 8-frame dovetailed with Miller frames. Unless, however, one gives very close attention to the business, a 10-frame hive is better.

2. If I am correct it is a tube which allows bees to pass readily from one hive-story to another, but only in one direction. Its purpose, if I am not mistaken, is to confine the queen to the lower story, but to allow the bees from above to join the queen as fast as they emerge from their cells. I don't know whether any one sells it.

3. Not so well as the simpler dovetailed.

4. Because of the danger that more harm than good can be done by it. Of course, if there is danger of starvation, feeding must be resorted to. But if there is abundance of stores in the hive, the feeding from day to day may stir up the bees to fly out when it is so cold that they will become chilled and lost. In exceptional cases, cases, where there is an interim of good weather with a dearth of forage, it is a good thing to feed so as to induce the queen to continue laying.

5. The trap will catch the queen, and the swarm will return to the hive. Then when you find a queen in a trap, you can take away the frames of brood with a sufficient number of bees to protect the brood, put them in a hive in a new place, releasing the queen in the hive on the old stand, and you will have about the same condition of affairs as if you had allowed the bees to swarm in the usual way.

Increase Without Swarming.

How can I double the number of my colonies without letting them swarm, and without buying queens? MISSOURI.

ANSWER.—Just before you think there's danger of swarming, put all the brood in an upper story over an excluder, except one frame with little or no brood that you leave in the lower story with the queen, filling the vacancies in both stories with empty combs or sheets of foundation. Five days later remove the upper story to a new stand, and the bees will do the rest. The queenless part will rear its own queen, and the flying force will remain with the old queen, ready for good surplus work. This is not the very best way to rear queens, but it fills the conditions of your problem.

Requeening—Kind of Hive.

I am not able to do hard work, so I have decided to try the bee-business for a living. I have only 7 colonies to start with, and they are mostly the black bees, yet they did well last season. I wish to get some Italian queens, but my hives are so constructed that I can't get at the queen. It is a plain box-hive with 8 or 10 brood-sections and a super above for 24 to 32 sections for honey. What kind of hive should I get, and how shall I get rid of the old queen, etc.? MISSOURI.

ANSWER.—You can do well with almost any hive with movable frames. Perhaps none would suit you better than the one most commonly in use, the dovetailed hive, a very plain hive with frames of Langstroth size, 17½x9½. You can get this hive from any dealer in bee-supplies.

Early Swarming—Two Queens in a Hive—Wiring Light-Brood Foundation.

1. On March 5 my father had a strong colony of bees that cast a fair-sized swarm, and I heard of another colony in this locality swarming 3 or 4 days earlier than that. On examining the bees a week after they swarmed I could not find a drone in the yard, and but very little drone-brood, and not much of that capped. Will not the young queen of the parent hive be too old to be mated by the time the drones are flying?
2. When running 2 queens to the hive, one below and the other above the excluder, which queen are the bees most likely to kill, the upper or the lower one?
3. For light brood foundation in extracting frames, would you advise wiring the full sheets or using the splints?

MISSOURI.

ANSWERS.—1. The question arises whether so early as March 5 the swarms were not hunger-swarms or something else abnormal. The fact that you could find no drones nor advanced drone-brood points in this direction. Yet you are in latitude 39, and I don't know how early you have regular swarming. If these were regular swarms, there is some

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danger from lack of drones, but often there may be a few scattering drones that you would not easily notice.

2. You probably have reference to the Alexander plan of putting a weak colony over a strong one in spring. If either queen is killed, it is likely to be the upper one.

3. I should use splints, and should be a little careful, first time putting frames in extractor, whether splinted or wired.

Using Empty Combs—Dewey Foundation Fastener—Selling Comb Honey to Hotels—"Pound" Sections.

1. I have a number of empty combs. Can I place these over strong colonies with an excluder between, extract the honey as fast as it comes in, and feed it in an Alexander feeder at night, to the colonies run for section honey?

2. Have you ever used the new foundation-fastener? I think it is the Dewey Automatic. Where is it made?

3. Did you ever try to sell comb honey to city hotels? They buy it readily here.

4. Why do some producers keep harping about a pound section when there is no trouble in selling it by the piece? This kind of agitation is detrimental to all concerned.

MASSACHUSETTS.

ANSWERS.—1. Yes, but it is a question whether it will pay.

2. I have not had one long enough to give it a thorough trial, but it seems to be an excellent machine. I think it is made by the inventor, E. H. Dewey, of Massachusetts.

3. I never tried it, but it's a good thing to do.

4. I'm not sure just what you refer to. There can be no objection to selling by the piece; but there may be very decided objection to selling 14 ounces for a full pound.

Feeding Bees Glucose, Sorghum and Candies—Packing for Winter.

1. Is syrup that contains 95 percent glucose and 5 percent sorghum good to feed to bees?

2. Is candy such as lemon drops or any kind of run-through-each-other candy good for bees?

3. Will bees winter on their summer stand if covered all around with $\frac{1}{2}$ foot of the following: Sawdust, shavings, or straw, and covered with boards to keep sawdust around?

WISCONSIN.

ANSWERS.—1. No; glucose is not fit stuff for man or bee. If fed when bees are flying daily, and in such way that none would go into surplus, it might do no harm; but it is doubtful if you could get bees to take it in such large proportion.

2. Fed in spring for brood-rearing, it would be all right, and some of it would be all right for winter. You know there's much difference in candy, that made from pure sugar making good winter food.

3. Very likely, especially if not in a windy place; but 3 or 4 inches might be as good as 6; some think better.

Wants Increase and Honey—Queen and Drone Traps—Bee-Escapes—Selling Honey.

1. I have but 5 colonies of bees, therefore I am after increase and honey combined. What is the best way to increase, and how about so doing with the frames from the stronger colonies?

2. How about the queen and drone trap catching a queen when swarming? Would it pay me to buy one?

3. As I am not thoroughly experienced yet, would you advise buying one of more Porter bee-escapes?

4. My bees wintered well, and I am very glad of it, too. I am looking for a good year, and if I do have a good flow of honey, say 150 pounds for 5 colonies, how would you advise me to dispose of it?

INDIANA.

ANSWERS.—1. It isn't an easy thing to tell what is your best way to increase. For some natural swarming is best, and for some artificial increase is best. If you depend on natural swarming, and want also to get a honey crop, then plan to have only one swarm from each colony. When the prime swarm issues, hive it and set it on the old stand, the old hive close beside it. A week later move the old hive away to feet or more. That will weaken the old colony so it will not swarm again, because the field-bees will all join the swarm; and the swarm will be thus strengthened so it will do good work in the supers.

Yes, you can increase by the nucleus plan, having a laying queen in a nucleus and adding frames of sealed brood taken from strong colonies. If you take these frames of brood in sufficient numbers about the time bees are likely to swarm, the old colonies will not swarm.

2. If there is no one on hand to see when a swarm issues, it will be a good thing to have a queen-trap to catch the queen. But you will still have the case to deal with just the same as if you had been on hand to attend to it.

3. You can get one escape and try it, and then you can tell better whether you want more.

4. With no larger quantity than you mention, there would be no trouble in selling at good prices directly to consumers. A sign, "Honey for Sale," facing the roadway, would likely bring enough customers. You could also trade honey for groceries, blacksmith bills, etc.

Management to Prevent Swarming.

The season of 1908 will be my first trial at the production of honey. I have 38 colonies to work with, do not want any increase, but will not complain if a small number of swarms issue. I can devote from 8 a. m. to 4 p. m. each week-day in the apiary. All brood-combs will be straight, and reasonably free from drone-cells. Ten-frame dovetailed hives will be used, an extracting super used as the first super and a comb honey super be placed between the hive and extracting super several days later. Then when both are well started in, they are to be reversed again; that is, the extracting super placed next to the hive. When more room is needed new supers will be placed above the extracting super, but always under the comb honey supers already on. Now if there is back ventilation at the bottom of the hive, and a bee-space opening made by sliding supers forward on the hive and each other, will the bees swarm to any great extent? You see, I have the time to sort over unfinished sections found near the opening and can place them in the next super going on the hive. Then toward the close of the season ventilation will be reduced from the top in order that the sections be better filled out and the unfinished work will be found in the extracting super. I have studied your several ways of preventing swarming and will use them if you think that this plan is not sufficient to reduce swarming to a small percent.

IOWA.

ANSWER.—Yes, your plan ought to reduce swarming to a very small percent, especially if drawn-out combs are in the first super, but just how satisfactory it will be as to sections remains to be seen. You do not say, but I suppose all supers after the first are to be section-supers. Then you say that at the last the unfinished work will be found in the extracting super. That sounds as if you meant to practise extracting until the close of the season. If you do that you will have work mostly in the extracting combs.

Combs Built Together.

I have a colony of bees in a Tumbo hive. I think it is queenless. It is full of honey, very heavy. I tried to take out the frames to see. The combs are joined together with bur-combs. I got the division-board out by cutting loose from both sides. Then I tried to cut loose the frame, and the honey ran too much. I was afraid to keep at it as the combs seem to be so solid together. They all seem to be that way. What is the best thing to do with it, or how would I best manage it? I have 3 more like it except that they are not queenless. What must I do to prevent them from joining the combs together hereafter? I don't see how the combs can be manipulated.

WEST VIRGINIA.

ANSWER.—First, as to prevention. If you use full sheets of worker-foundation, as many of our best bee-keepers do, there is practically no danger of crooked building. Even if you have only a shallow starter, there is little danger, for if each comb is started at the top at the middle of the top-bar, the bees will not vary much from the perpendicular in building down. Without wiring or splints, there is danger, especially if a strong swarm is thrown upon the frames, that there may be some breaking down. So it is well in such cases to examine the frames within 1 to 2 days, and correct any wrong of the kind that may have started.

As to what should be done with those already on hand in which there is some crooked building, much depends upon just what the condition is. It may be that only one or 2 combs are out of the way, in which case a little

cutting will free the comb from the frame to which it is partly attached. Even if every comb in the hive is built wrong, if each comb is attached properly to its own top-bar throughout most of its length cut away the small part that is attached to the wrong top-bar, then crowd back the comb into its own frame, secure it there by tying strings about it, and the bees will do the rest.

It is just possible that nothing was used in the way of foundation or comb for starters, and the combs are built crosswise. In that you are to consider that you have, practically, a box-hive on hand, and you will deal with it just as you would with a box-hive. It is, however, just a little better than most box-hives, because you can take a hand-saw, cut away all attachments of comb to the sides of the hive, turn the hive upside down, and force out the whole business, frames and all, lifting off the hive. If you wait till the colony swarms, you can deal with the case 21 days after swarming, when there will no longer be any worker-brood in the hive.

Starved Brood—Dividing Colonies.

1. I am a tenderfoot in the bee-business and would like some information. I have 13 colonies and there are 5 of them that are carrying out brood almost ready to hatch. What is the trouble, and how can I prevent or remedy it?

2. How can I get the moth or wax-worm out of the foundation frames?

3. When is the proper time to divide colonies? My bees came through the winter in fine shape and are extra strong.

4. I have some old colonies that have a dark red substance on the division-board and frames. They appear to be healthy and all right.

5. When you answer this letter please use plain U. S. language as I have no book-learning.

OKLAHOMA.

ANSWERS.—1. In the spring of the year the bees are likely to use large quantities of stores in rearing brood, and it generally takes several years for a beginner to learn that unless they have a big lot of honey on hand there is danger of starvation. You have on hand, almost certainly, a plain case of starvation, and of course there is just one way to prevent or cure, and that is to feed.

2. Prevention is ever so much better than cure. The way to prevent the wax-worm from getting in its work is to have strong colonies of Italian bees. Even black bees will generally hold their ground, if colonies are strong; and a weak colony of Italians will also hold its ground. The same thing (strong Italian colonies) will also serve as a cure. You can, however, give the bees some help by getting out the big, fat fellows. Take a sharp-pointed wire-nail, or something of the kind, and pick open the burrow of the worm at one end, then commence at the other end and dig along until Mr. Worm comes out, and then take vengeance on him. If you have empty combs infested with worms, take a small oil-can filled with gasoline, and squirt a little of the gasoline into any place where you think there is a worm.

3. Generally when bees begin to swarm naturally is the best time to divide, or as soon thereafter as colonies are strong enough.

4. The bees have been troubled to some extent with diarrhea, and it is their droppings that you see. They prefer to empty themselves when on the wing at some distance from the hive, but when confined too long, or when troubled with diarrhea, they empty themselves in the hive or at the front.

5. I've tried to give you my best brand of U. S. talk, and if you find any words not entirely satisfactory, return them and I'll replace them with fresh stock.

Rearing a Few Queens—Making Increase.

1. How can I rear a few queens for increase? I have the "A B C of Bee Culture," "Langstroth on the Honey-Bee," Cook's "Manual of the Apiary," "Forty Years Among the Bees," Doolittle's "Queen-Rearing," and "Improved Queen-Rearing." I also have some smaller books. The first three have been revised since I bought. Now it is Doolittle that has bothered me, as it seems his book gives one the impression that he must graft in order to get good queens. I tried it once and failed. Anyway, I think so many books are confusing to any one without experience.

2. In your "Forty Years" (page 238) you recommend partly drawn out foundation with larvae. Dr. E. F. Phillips uses larvae. Mr. Alley, in his book, and Swarthmore in "Increase" (page 8), use eggs. Mr. Doolittle says bees will not start cells at once, and that being so, why would it not be better to give the bees eggs instead of young brood?

3. Would it be best for me to use a swarm box to start the cells and then have them finished over an excluder in a very strong colony, or put up the queen about swarming time, and rear queens in the lower hive, as you speak about on page 166 of your book, using foundation with eggs or brood; or would you advise some other way?

4. How would I best make increase? What I want is to double my colonies and secure extracted honey, too. I would make 3 colonies from 2, but they swarm when made that way, or at least they did when I tried it. MAINE.

ANSWERS.—1. I don't think I can give you any better way than that given in "Forty Years Among the Bees," except that I wouldn't now use the fussy way there given to get cells started. Instead of that I'd take any strong colony that happened to be convenient, take away its queen temporarily, and give it the young brood for cell-starting. Although Mr. Doolittle may prefer grafting, I don't think he would insist that good queens can be produced only in that way. Your failure at grafting was nothing unusual. Probably it is the common thing upon first trial, no matter how well one succeeds afterward.

Yes, it is confusing to have so many different ways presented. And yet, if only one way should be given, and every one should follow that one way, there would be no chance for progress, and we would be still brimstoning our bees in the fall to take the honey. One of the beauties of bee-keeping is that there is always something new to learn, and we must stand the confusion of different teachings for the chance of picking out what may best suit our own cases. One said to me once, "I suppose you don't any more read all that comes in the bee-papers." I replied, "You couldn't be much further out of the way. My knowledge of bee-keeping has come partly from my own experience, but very much more from the experience of others, and I am still learning in both ways all the while. From a large part of all I read in the bee-papers I gain nothing, but I dare not skip any of it, for I don't know where the nuggets are, and at any minute I may strike some hint of value, even in something that comes from the rawest beginner." So don't worry about the confusion of ideas; in time you'll learn to sift out just what fits best your own case.

2. It is hardly correct to say that I recommend partly drawn foundation for cell-starting, and yet you are not the only one who has gotten that idea. I may say in parenthesis that while I tell in my book about keeping the best queen in a nucleus, that is not absolutely necessary; all you want is to get a fresh frame of comb built in the hive that contains your best queen, whether it be in a nucleus or full colony; the advantage of a nucleus being that your best queen will last longer, because laying less, and also that in a nucleus you are sure to have worker-comb built, whereas in a strong colony the bees may fill your frame with drone-comb. So give to your best queen a frame containing nothing but one or two small starters, and in a week or more you will be likely to find the frame nearly filled with worker-comb containing eggs and brood in all stages up to that which is sealed or nearly ready to seal. You would hardly call that "partly drawn foundation," would you? For it is fully drawn comb, all but the margin.

Now go to any strong colony, remove its queen, take out a frame and put in the center of the brood-nest your comb for cell-building. It is better first to trim off the margin containing only eggs, not cutting away any larvae, and no harm if some eggs are left. You will see that in this I am differing from my former practice, for formerly I allowed no brood in the hive except the one choice frame. I find, however, that when I give them this frame of virgin comb, they think it so much suited to their needs, that they start few or no cells on the other combs. You may leave the frame untouched for 10 days, when you ought, with favorable weather and pasturage, to find a lot of sealed cells that can not be excelled. If, however, you prefer, you can put the cells in an upper story over an excluder, any time after they are started. You will see that I really give the bees eggs and larvae in all stages, for generally I don't trim off all the eggs, and I have full faith in the wisdom of the bees to select what is best for their purpose. At any rate I get fine queens. While my plan may not be best for those who make a business of rearing queens for the market, I don't know of any better way for me, and I have reared many queens by the other plans.

If you give the bees only eggs, there is delay thereby. While the bees may not start cells "at once," they come so near it that there is some loss of time by giving only

LISTEN! Do You Hear Those Bees Working?

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eggs. Give eggs and brood, and the bees can take their choice.

3. I would advise the way just given.
4. One way is to put all brood in an upper story over an excluder, leaving the queen below, then a week or 10 days later set the upper story on a new stand, giving it a queen or a ripe queen-cell.

If you have further questions, don't hesitate to send them along.



Good Prospect for Honey.

Bees are doing well now on fruit-bloom. Most of my colonies have the brood-chamber full of brood and honey. Alfalfa will bloom in 2 weeks, and if it yields honey freely, we will get along better than for several years.

DR. G. BOHRER.

Lyons, Kan., April 21.

Mild Winter—Wintered Nicely.

We have had a very cold winter, and so far as I know, bees have wintered very nicely. The next 4 or 6 weeks are usually the hardest for bees here.

W. H. ROOT.

Carroll, Neb., April 1.

Abundance of Clover.

Bees have wintered well here. An abundance of clover is springing up everywhere. With good weather there will be an early and rich harvest of honey.

MRS. WM. MIDDLECAMP.

Oshkosh, Wis., April 24.

White Clover Growth is Small.

Bees are doing well. Swarming is not yet over. White clover is in bloom, but owing to dry weather the growth is small.

J. W. K. SHAW & Co.

Loreauville, La., April 23.

Wintered Best in Several Years.

I took 183 colonies of bees out of the cellar April 10 and 11. In general they are better than they have been for several years. Some colonies seemed nearly strong enough to swarm when taken out of the cellar.

F. W. HALL.

Hall, Iowa, April 13.

Wintered Too Warm.

I wintered my bees in a little house above the ground, with floor 2 feet from the ground. It was plankd on all sides but the south, which was left open. When I took them out the cushion was dripping with moisture. And they had made comb below the Hill's device and above the frame. They had wintered too warm. They would have done all right out-of-doors.

R. B. PERRY.

Greenfield, Tenn., April 17.

Did Well on Fruit-Bloom.

Bees did well here on fruit-bloom. The brood-chambers were about empty before the bloom, but are in good shape now. It is cold today, but I hope we may escape frost. I lost an apple crop of over 600 trees last year.

G. BOHRER, M. D.

Lyons, Kan., April 27.

Apiarian Rights of Priority.

On pages 80 and 81, and also on page 112, appears a discussion between N. P. Anderson and Dr. C. C. Miller about apiarian rights of priority. It would be hard if a farmer has 160 or more acres of land and an expert bee-keeper 1 or 4 acres, if the latter be there first why should he not have the right to prohibit the farmer from using his land for any purpose he sees fit? It does not necessarily follow that his bees are in boxes, nor that they are rotten because the man is a farmer, no more than Mr. Root's are because he is a manufacturer, or Mr. Dadant's, who is a banker. A farmer can not pasture his stock on any other man's land without his consent, and if I buy my land and pay for it, would it be right for the government to dispose of the rights of the bee-pasturage belonging to a private individual?

As for keeping rotten bees, or foul-brood bees, that is a different thing. The government has a right to step in just as much as when a farmer keeps any other diseased stock that will spread and injure his neighbor's stock; and if so many bees were kept in any locality that it was necessary to reduce them, would it not be more just to allot the number kept according to the bee-pasturage a man possesses? That a man is first in some place does not give him any right to another man's property, but no man, expert or not, should be allowed to spread foul brood or any other disease to the injury of his neighbor. And still another thing, it would be wise to prohibit any one from keeping bees that would not give them proper care, and let them swarm all summer and fill the woods up with them to the injury of all, and to no good for anybody.

O. K. RICE.

Grays River, Wash., April 25.

Wintered Well—Bright Prospects.

I put 18 colonies into winter quarters, and have now 16 strong ones with plenty of honey, and all with considerable brood. Prospects look bright with me for a successful season. Last year being a poor season, I fed my bees sugar syrup in the fall, being afraid of the quality of stores they had. I lost but 2 colonies during the winter, and they were last-of-August swarms. One of my neighbors who did not take the same precaution lost 4 out of 5 colonies with dysentery. They do not take the American Bee Journal. I do.

H. S. BUCHANAN.

Indiana, Pa., April 21.

Books for Bee-Keepers

Every bee-keeper should have a bee-book besides a bee-paper. On another page will be found all the best books offered—either at a price, postpaid, or as a premium. If you can not earn them as premiums for getting new subscriptions, it will pay you well to purchase one or more of them. You will find them of great value. There are so many things in the books that are needful to know, and that of course could not be told over and over again in the bee-papers. If a bee-keeper can afford only one, it would better be the book rather than the paper. But now that the American Bee Journal is only 50 cents a year, of course, no bee-keeper, however limited his apiary may be, can afford to be without its monthly visits.

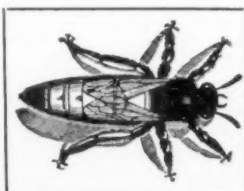
Honey as a Health-Food.—This is a 16-page honey-pamphlet intended to help increase the demand for honey. The first part of it contains a short article on "Honey as Food," written by Dr. C. C. Miller. It tells where to keep honey, how to liquefy it, etc. The last part is devoted to "Honey-Cooking Recipes" and "Remedies Using Honey." It should be widely circulated by those selling honey. The more the people are educated on the value and uses of honey, the more honey they will buy.

Prices, prepaid—Sample copy for a 2-cent stamp; 50 copies for 70 cents; 100 for \$1.25; 250 for \$2.25; 500 for \$4.00; or 1000 for \$7.50. Your business card printed free at the bottom of front page on all orders for 100 or more copies. Send all orders to the office of the American Bee Journal.

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Revised by Dadant—Latest Edition

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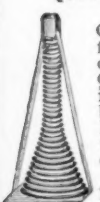


Your name and address put on one side of the handle as shown in cut, and on the other side pictures of a queen-bee, a worker, and a drone. The handle is celluloid and transparent, through which is seen your name. If you lose this knife it can be returned to you, or serves to identify you if you happen to be injured fatally, or are unconscious. Cut is exact size. Be sure to write exact name and address. Knife delivered in two weeks. Price of knife alone, postpaid, \$1.25. With year's subscription, \$1.50. Free for 5 new 50c subscriptions.

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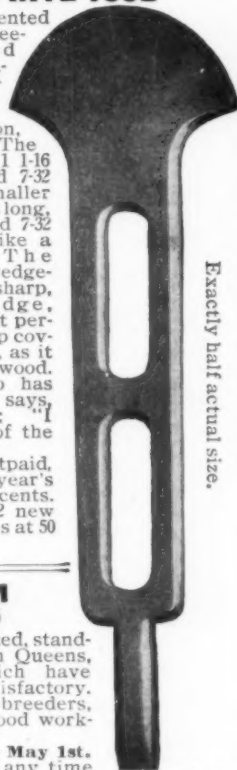
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Nuclei—One 3 L. frame, \$2.50; price of Queen to be added.

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Advertisement.—In Italy we have but one race of bees. So all my queens are warranted very pure. I have been keeping bees these last 10 years, and have never had a single case of foul brood (which is scarcely to be found in this country). It is scarcely necessary for me to say that I take every possible care to avoid it. So my customers must never have any fear of contagion from my bees. All my queens are reared from extra-selected breeding queens most carefully tested.

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Choice Queens Only

ITALIANS and CARNIOLANS

1 Untested, 75c; 12, \$7.50. 1 Tested, \$1.00; 12, \$11.00. 1 Selected or Breeder, \$2.00 to \$3.00.

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When we announced the completion of the new edition late in 1907 there was a good deal of satisfaction to notice the big bunch of orders on hand, although we did regret the unavoidable delay in getting the books to some customers who had waited patiently for months. Over two thousand copies of this edition have already been sent out. We believe all urgent orders have been filled. We felt that the change of price to \$1.50 postpaid might cause a little slackening in the demand. Not so, however, for in all our experience the orders never came faster.

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Each issue is very fully illustrated. The covers are done by the finest engravers in Chicago, and our writers are the best in the land. Besides dozens of writers of prominence whose names we can't even mention for lack of space, we have such men as Dr. E. F. Phillips, U. S. Dept. of Agriculture; Dr. Edward F. Bigelow, Associate Editor St. Nicholas; F. Dundas Todd, former Editor Photo-Beacon; Allen Latham, Connecticut, etc.

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For large apiaries, or where the honey comes with a rush and labor is scarce, you should investigate our power machines. A circular of these will be sent on request.

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Honey and Beeswax

CHICAGO, April 23.—We are now entering the strawberry season, which always means a curtailment of the honey market—but the stocks of comb are not heavy of the fancy grades; other grades are difficult to sell, and there is quite a quantity of it in the hands of commission merchants. Prices on the best grades are steady, but that is not the case with anything under choice to fancy. There is quite an anxiety to dispose of both extracted and comb, in view of a good crop in the South and West now being gathered. Beeswax is steady at 28 to 30c. **R. A. BURNETT & CO.**

INDIANAPOLIS, Apr. 23.—Demand for best grades of extracted honey is good, while sales on comb honey are very slow. Jobbers are well supplied, but almost none is being offered by producers. Jobbers have been paying the following prices, delivered here: No. 1 and fancy comb, 16 to 17c; extracted, white clover, 8 to 9c; amber in barrels, slow at 6 to 6½c. Beeswax, 28c cash, or 30 cents in exchange for merchandise. With the promise of a fair crop, jobbers are predicting slightly lower prices. **WALTER S. POWDER.**

SAN FRANCISCO, April 1.—In reference to quotations on honey, we would say that spot

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stocks are so light it is not much use quoting. There are 1 or 2 cars in Southern California which are held by the apiarists at 6 1-2c, which is the only honey we know of left in the State. It will therefore be seen that it would be useless to give present market quotations since there is really no honey quotable. **GUGGENHIME & CO.**

LOS ANGELES, April 23.—The prospects are for a very short crop of honey this year. The prices on extracted honey are from 5 to 7 1-2c. Comb honey, 11 to 16c. **H. J. MERCER.**

CINCINNATI, April 23.—The market on comb honey is very quiet, and there is hardly any demand. The price for extracted amber in barrels is 6c. We have no white clover to offer. California white sage is selling at 9 and 9 1-2c. **C. H. W. WEBER.**

KANSAS CITY, Mo., April 23.—The supply of 1907, of both comb and extracted, is about exhausted; the demand is fair. We quote: No. 1 white comb, 24 sections, \$3.00; No. 2 white and amber, 24 sections, \$2.75. Extracted, white, 7 1-2c. Beeswax, 25 to 27c. **C. C. CLEMONS & COMPANY.**

ZANESVILLE, OHIO, April 18.—The demand for honey continues quite light, and one or two of the smaller commission men are cutting prices. No. 1 to fancy comb honey brings, when sold to the wholesale grocer trade, about 18c. Extracted is moving very slowly. The supply of beeswax exceeds the demand. **E. W. PEIRCE.**

DENVER, April 24.—The local demand for comb honey continues to be light. We quote No. 1 white comb honey at \$3.00 per case of 24 sections, and a good No. 2 grade at \$2.75. Extracted alfalfa firm at 8 to 9c; dark strained, 6½ to 7c. We pay 24 to 25c for clean yellow beeswax delivered here.

THE COLO. HONEY PRODUCERS' ASS'N.

TOLEDO, April 23.—The market on honey at the present writing is rather quiet. Stocks are mostly cleaned up in this section. Fancy white brings 16 to 17c in a retail way, and very little demand. No demand for other grades. Extracted white clover would bring 7 1-2 to 8c. Southern or amber honey, for cooking purposes, is worth 5 and 5 1-2c in cans or barrels. Beeswax 26 to 28c. **THE GRIGGS BROS. & NICHOLS CO.**

NEW YORK, April 24.—There is absolutely nothing doing in comb honey. Some little demand for fancy white stock, but does not amount to much. Dark and off grades not wanted at all. Some of the holdings left will be carried over, therefore we cannot encourage shipments for the time being, not even on consignment. Demand fair only for extracted, with supplies large and

to meet all demands. Market in general is weakening, and prices show a downward tendency. We quote: California white sage, 9c; light amber, 7 1-2 to 8c; amber, 6 1-2 to 7c. New crop is now beginning to arrive from the South, and from reports we are receiving we are inclined to believe that a good crop will be had this season. We quote nominally: Average quality at from 55 to 60c per gal.; fancy grades, 70 to 75c. Beeswax firmer at from 29 to 31c, according to quality. **HILDRETH & SEGELKEN.**

PHILADELPHIA, April 24.—The call for both comb and extracted honey has fallen off considerably in the last two weeks. Quite a few job lots on the market, which parties will sell at almost any reasonable offer. This makes the prices very unsteady. We quote: Fancy white comb honey, 17 to 18c; No. 1, 15 to 16c; amber, 13 to 14c. Extracted honey, fancy white, 8 to 9c; amber, 6 to 7c. We do not handle on commission. **WM. A. SELSER.**

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